JVC NIVICO

No. 4073
July, 1972

SERVICE MANUAL

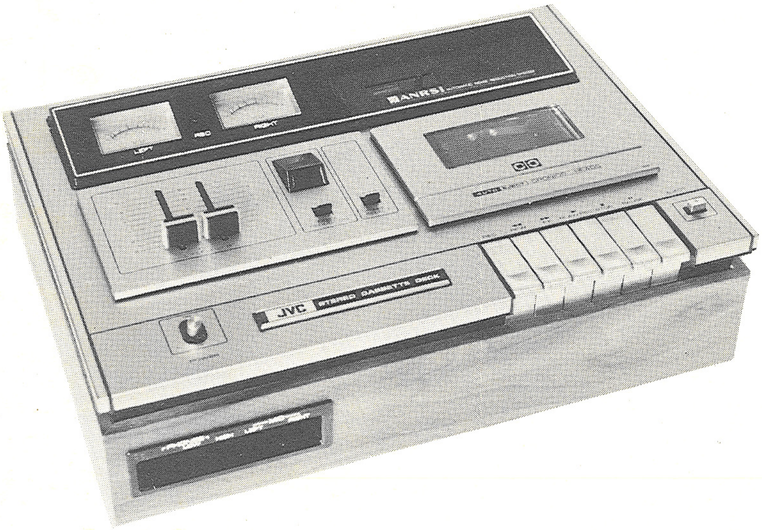


Fig. 1

MODEL CD-1667, 1667U

STEREO CASSETTE TAPE DECK

Dimensions:	12.0 (H) x 38 (W) x 26.5 (D) cm (4-3/8" x 14-15/16" x 10-7/16")
Weight:	4.6 kg (10 lbs)

★ In this Service Manual, frequency is indicated in Hz.

★ In this tapedeck, ISO screws are used.

SPECIFICATIONS

Power source:	AC 120V, 60Hz (CD-1667) AC 100V, 110 ~ 120V, 200V, 220 ~ 230V (50, 60H$_2$) (1667U)
Fuse capacity:	1.8A, 0.8A
Power consumption:	30W (CD-1667) 15W (1667U)
Track system:	2-channel, 4-track
Cassette:	C-60, C-90, C-120
Tape speed:	4.8cm/sec. (1-7/8ips)
Recording system:	AC bias 95kHz
Erasure system:	AC erasure
Recording time:	60 min. for double pass (C-60)
Fast forward time:	100 sec. or less (C-60)
Rewinding time:	100 sec. or less (C-60)
Transistors:	20
IC:	4

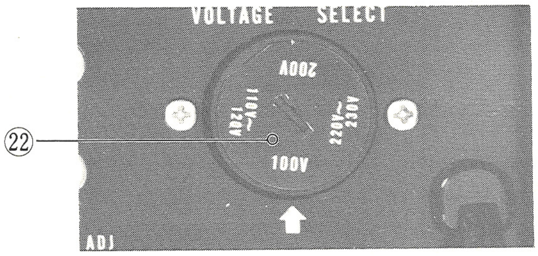
Diodes:	17	
Frequency response:	30 ~19,000Hz (Chrome-tape)	
Crosstalk:	60dB or more	
S/N ratio:	50dB	
Total harmonic distortion :	4% or less	
Playback compensation characteristic:	1,590μS, 120μS	
Input:	Microphone	0.7mV, 10kΩ
	DIN input	20mV (Signal source 80kΩ)
	AUX. IN	80mV, 330kΩ
Output:	DIN	0.5V, 5kΩ
	LINE OUT	1V, 3.3kΩ
	Headphones	0.5mW/0.12mW, 8Ω

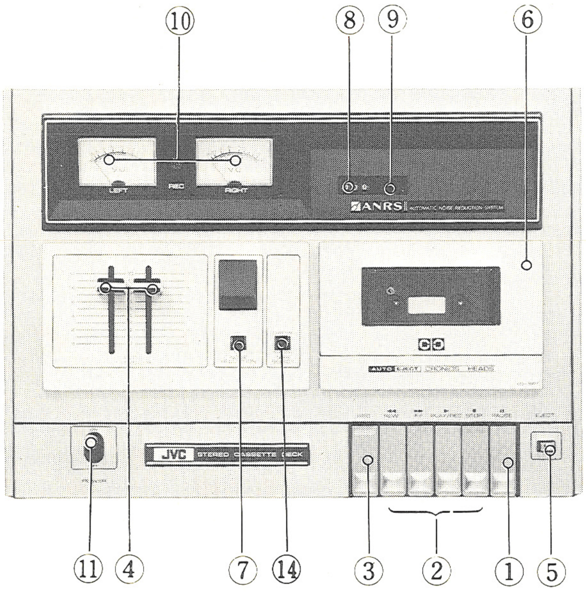
VICTOR COMPANY OF JAPAN, LTD.

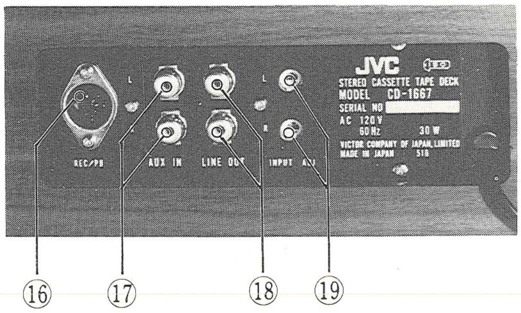
2. Features

- ☆ To remove the tape noise automatically, the ANRS circuit is incorporated. The circuit is designed to operated on the theory of the low-noise recording system employed in a professional recording studio.
- ☆ At the end of recording, playback, fast forward or rewinding, the tape is automatically stopped, and the cassette is also ejected automatically.
- ☆ A long-life chronios head is used.
- ☆ The tape selector switch enables to use a ultra-high-performance chrome-tape featuring an excellent high-frequency linearity and superb frequency response.
- ☆ High performance amplifier incorporating IC circuit and silicon transistors.
- ☆ Smooth turning electronic governor motor and top grade tape feed mechanism ensuring high accuracy.
- ☆ Large-sized high-sensitivity level meter
- ☆ Pause button
- ☆ Tape counter
- ☆ Headphone volume selector switch

3. Names of Main Parts


VOLTAGE SELECT
200V
110V~120V
220V~230V
100V
ADJ
㉒


⑩
⑧
⑨
⑥
ANRS
JVC STEREO CASSETTE DECK
⑪
④
⑦
⑭
③
②
①
⑤


JVC
STEREO CASSETTE TAPE DECK
MODEL CD-1667
SERIAL NO
AC 120V
60Hz 30W
VICTOR COMPANY OF JAPAN, LIMITED
MADE IN JAPAN
REC/PB
AUX IN
LINE OUT
INPUT ADJ
⑯
⑰
⑱
⑲

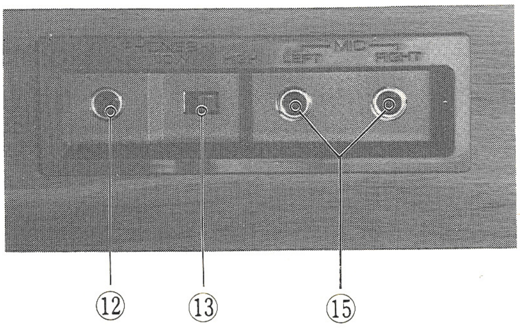

PHONES
MIC
LEFT
RIGHT
⑫
⑬
⑮

Fig. 2

1. Pause button (PAUSE)
2. Operating buttons
3. Record button (REC)
4. Volume control knob
5. Eject button (EJECT)
6. Cassette holder
7. ANRS switch (ANRS)
8. Tape counter
9. Reset button
10. Level meter
11. Power switch (POWER)
12. Headphone terminal (PHONES)
13. Headphone volume selector switch
14. Tape selector switch
15. Microphone terminal (MIC)
16. Record/Playback connector (REC/PB)
17. Auxiliary input terminal (AUX IN)
18. Line output terminal (LINE OUT)
19. Input level adjuster (INPUT ADJ.)
20. ANRS indicator
21. Head cover
22. Voltage Select switch (1667U)

4. Removal and Replacement of Main Parts

Before Removal:

- To remove the top panel, the cassette holder cover must be removed first. Without removing it, the top panel can not be removed.
- To remove the cassette holder cover, pull it in the direction of the arrow shown in Fig. 4.
- The cassette deck is built with many small parts which are densely installed. It should be handled with special care.

1. Construction and Disassembly

This unit consists of the top panel ①, body ② including the mechanism and amplifier, and cabinet ③.

To disassembly, the unit should be placed upside down to avoid scratching it. The cabinet can be removed by loosening the six screws.

To separate the body from the top panel, remove the six screws (blue) indicated by arrows in Fig. 5.

2. Electrical Circuits

2–1. Removing the amplifier circuit board

To remove the amplifier circuit board, remove the three screws (①, ② and ③) indicated by arrows in Fig. 6. In this stage, the record change mechanism rod and lever are connected, but the amplifier circuit board can be turned up 90 degrees.

Next, remove the nut, and disconnect the rod from the lever. The amplifier circuit board can be removed freely.

2–2. Removing the ANRS circuit board

Remove the four screws (④, ⑤, ⑥ and ⑦) indicated by arrows in Fig. 6, and remove the ANRS circuit board.

2–3. Removing the oscillation circuit board

Remove the ANRS circuit board first accoring to 2–2 above, and remove the two screws holding the oscillation circuit board case. The case now can be removed.

Next, remove the screw securing the circuit board to the case, and the circuit board can be removed.

2–4. Removing the RPM detector circuit board

Remove the screws (⑧ and ⑨) shown in Fig. 6. The bracket is fitted with transistors for better radiation efficiency. It is not advisable to remove the print circuit board and bracket.

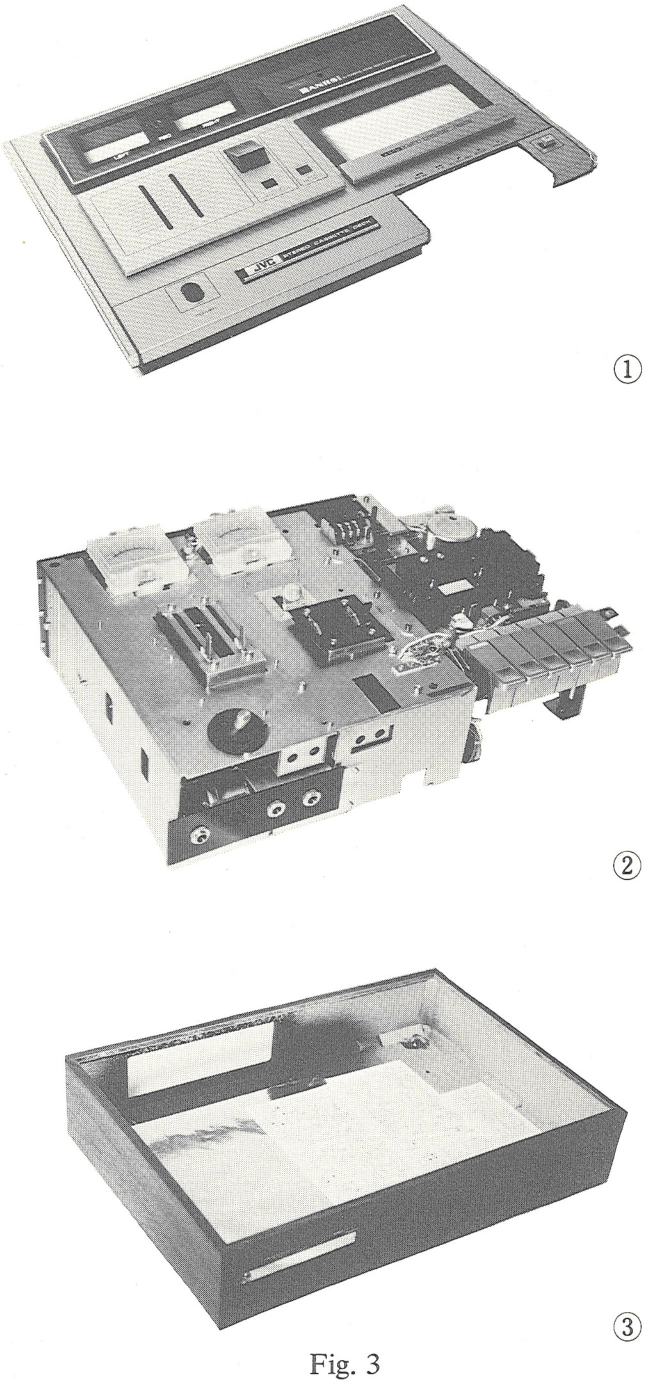


Fig. 3

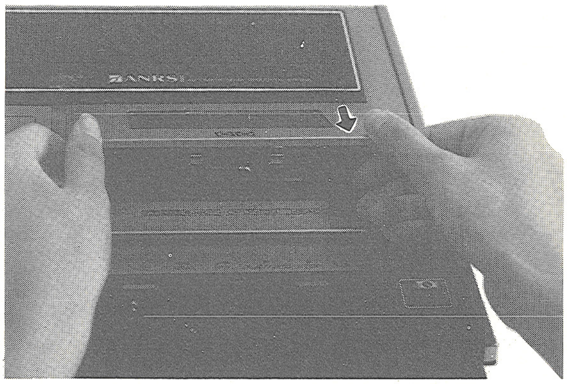


Fig. 4

2–5. Removing the power source circuit board

Remove the screws (⑩ and ⑪) indicated in Fig. 6, and the power source circuit can be removed.

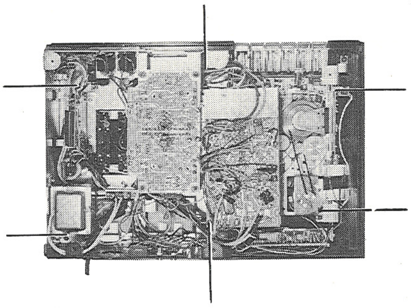


Fig. 5

2–6. Replacing the fuses

Fuses are installed in the positions (⑫ and ⑬) in Fig. 6. According to 2–1 and 2–5 above, remove the print circuit board.

The fuse capacity is 0.8 A for ⑫ and 1.8 A for ⑬ .

Before replacing a fuse, be sure to check the cause of fuse burning.

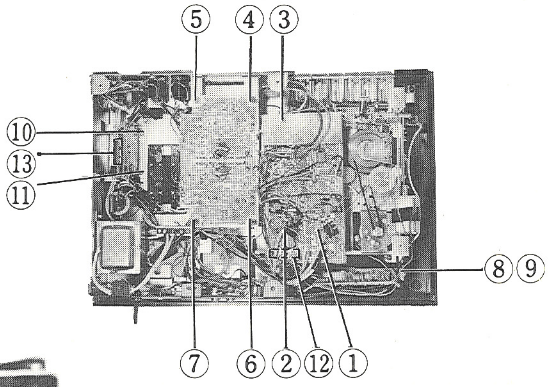


Fig. 6

3. Mechanism Parts

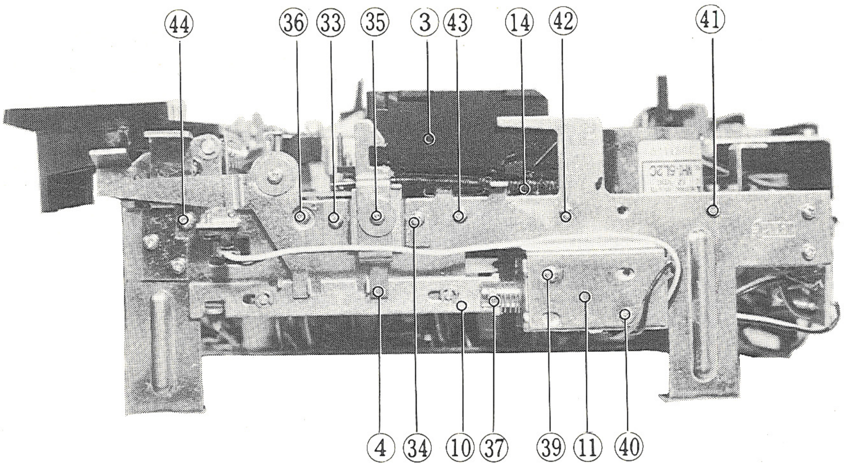


Fig. 7

3–1. Removing the Motor (Figs. 8 and 9)

1) Desolder the motor wires (red and black)
2) Remove the two screws (㉛ and ㉜) holding the motor ① to the motor bracket. The motor can be removed.

3–2. Removing the Flywheel (Figs. 7 and 8)

1) Remove the screws (㉝ and ㉞) securing the lever ④ locking the casette holder ③. Then remove the screws (㉟ and ㊱), and the flywheel holder ⑤ can be removed.
2) Remove the "E" ring, and pull out the take-up idler arm ⑥.
3) Remove the capstan belt ⑦, and pull out the flywheel ⑧. The flywheel now can be removed.

3–3. Removing the Plunger (Figs. 7 and 8)

1) Remove the screw ㊲ and nut ㊳ securing the plunger ⑨ and slide bar ⑩ together.
2) Remove the two screws (㊴ and ㊵) securing the plunger to the bracket ⑪ , and the plunger can be removed.

3–4. Replacing the Capstan Belt (Figs. 7 and 8)

The capstan belt can be replaced without removing the flywheel holder ⑤.

1) Loosen the two screws (㉟ and ㊱) securing the flywheel holder according to 2–1) above.
2) Remove the capstan belt ⑦ from the motor ① and take-up idler arm ⑥, and pull out the belt through the space between the flywheel ⑧ and the flywheel holder ⑤.

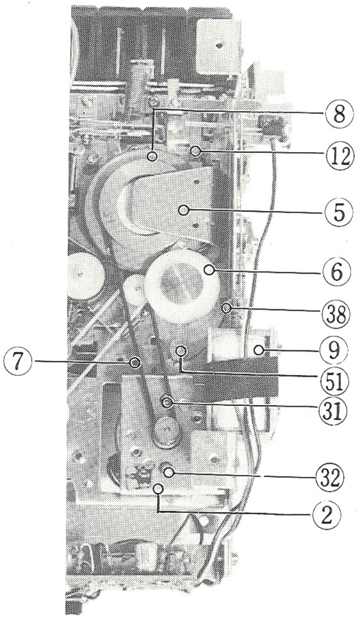


Fig. 8

3–5. Removing the Cassette Holder (Fig. 7)

1) Loosen the four screws (㊶ , ㊷ , ㊸ and ㊹) holding the bracket ⑪ to the chassis ⑫ .
2) Remove the spring ⑭ pushing the cassette holder ③ upward.
3) Turn the bracket ⑪ to the right, and the cassette holder ③ can be removed.

3–6. Removing the Pinch Roller (Fig. 9)

1) Remove the "E" ring ㊺ holding the pinch roller arm ass'y ⑮ , and the pinch roller ass'y can be removed. (The pinch roller can be removed from the pinch roller ass'y ⑮ .)

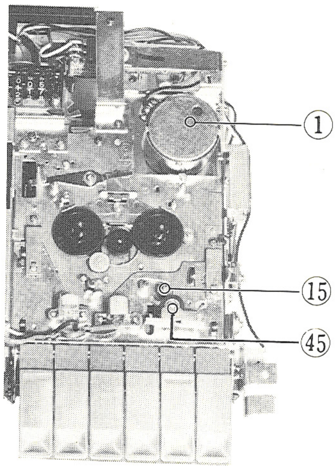


Fig. 9

3–7. Removing the Counter Belt (Fig. 10)

1) Remove the amplifier circuit board according to 2.–2–1 above.
2) Remove the two screws (㊺ and 46) holding the bracket ⑯, and remove the bracket ⑯ with the relay circuit board.
3) Remove the counter belt ⑱ from the pulley ⑰ on the counter drive side.

Note:

After installing the bracket ⑯, make sure that the plate turns without contacting the lamp bracket. For details, refer to "Auto-Eject".

3–8. Removing the Counter (Figs. 9 and 10)

1) After removing the counter belt ⑱ , remove the screws (㊼ and ㊽) holding the counter bracket ⑲ , and remove the counter together with the bracket.
2) Remove the two screws securing the counter to the counter bracket, and remove the counter.

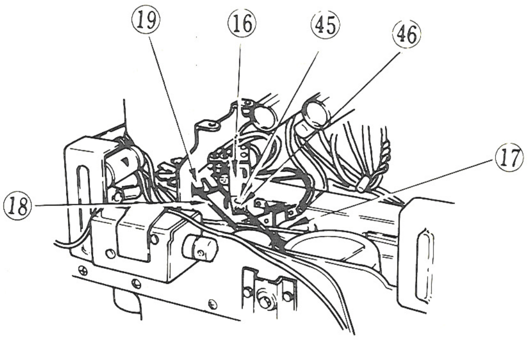


Fig. 10

5. Replacement and Adjustment of the Heads

If either of the record/playback head and the erase head shows low performance because of wear, broken wire or excessive magnetization, it should be replaced.

1. Replacing the Head

Remove the top cover, and the heads will be exposed to view as shown in Fig. 11. The record/playback head can be removed by loosening the screws ③ and ④, while the erase head by loosening the screws ① and ②.

After replacement, adjust the head for azimuth. If necessary, adjust the level meter for needle deflection according to 6–1 below.

2. Azimuth Adjustment

Insert the cord plug into the LINE OUT jack (or REC/PB), and connect the other end of the cord to a vacuum valve voltmenter. Then play the azimuth adjustment standard tape (e.g., JVC's VTT-615 10 kHz), and turn the adjustment screw ③ so that the output will become maximum.

If the azimuth adjustment standard tape is not available, play a music cassette. When treble response becomes optimum, set the adjustment screw. After this adjustment, the screw ② should be locked with a bond.

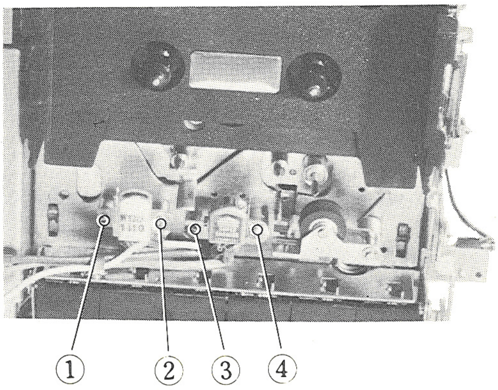


Fig. 11

6. Main Adjustments

6–1. Adjusting the Needle Deflection of the Level Meters

Both right and left level meters are so adjusted that the needles swing properly. But if any of the meter parts is repalced, the meter may require adjustment because of a slight difference between the old and new parts.

If adjustment is needed, take the following steps.

Recording:

1. Slide the volume control knobs for both right and left channels so that the volume will be at maximum.
2. Apply a signal to the microphone jack, and check to see if the meter needles deflect.
3. If both meter needles will not swing evenly, adjust the semi-fixed resistors (③ and ④) alternately so that both needles deflect evenly (See Fig. 12). Turning the resistor in the direction of the arrow makes the needle swing far. For precise adjustment, it is advisable to connnect a 100 Ω resistor across the head, and adjust the semi-fixed resistors

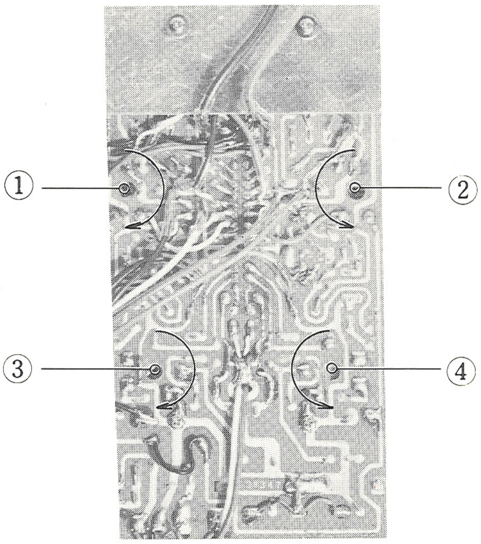


Fig. 12

③ and ④ so that the meter needle will stay at 0 VU when the voltage across the 100 Ω resistor is 4.5 mV at 1 kHz. (For this adjustment, the bias current must be cut off.)

Playback:

1. After making sure that the meter needles swing during the recording operation, adjust the volume control knobs so that the needles stay at 0 VU. Then start recording.
2. Next, play back the recorded portion, and make sure that the meter needles swing in the 0 VU zone.
3. If both meter needles will not deflect evenly, turn the semi-fixed resistors (① and ②) in Fig. 12 alternately to set the needles to 0 VU. Turning the resistor in the direction of the arrow makes the needle swing far.

6–2. Input Level Adjustment

The DIN (REC/PB) input level is adjusted to 20 mV (signal source impedance 82 kΩ), but when the output of the amplifier is excessively large, distortion may take place before the volume control. In this case, the following steps should be taken for adjustment.

1. Place the stereo set or the amplifier in the recording posisition.
2. If the level meter needle swings beyond 0 VU with the volume control set at "3" or less, adjust the adjustment volume as shown in Fig. 13 so that the meter needle will not swing beyond 0 VU with the volume control set at "5 ~ 8".
   The AUX IN jack input can be adjusted in the same manner.

6–3. Recording Bias Current Adjustment

The recording bias current is adjusted properly, and therefore, no adjustment is required normally. If the head or other parts are replaced, adjustment should be made in the following manner.

1. Checking the bias current

Place this unit in the recording position, and measure the AC voltage by V.T.V.M across each head without applying recording input through the microphone or others. If the voltage measured is roughly as specified below, the bias current is considered to be normal.

Record head .... 12 V (normal tape), 18 V (chrome tape)
Erase head .... 27 V

For this test, be sure to use a vacuum tube voltmeter which is superior in high frequency characteristics.

2. Adjusting the bias current

As shown in Fig. 14, the oscillation circuit adjuster is built in the shield case, and adjustment can be made by turning the semi-fixed volume control. According to the tape selector switch position, it is necessary to make adjustment separately for the normal and chrome tapes. On the normal tape posisition (right), turning the semi-fixed volume in the direction of the arrow increases the current. On the chrome tape position (left), turning it in the direction of the arrow also increases the current.

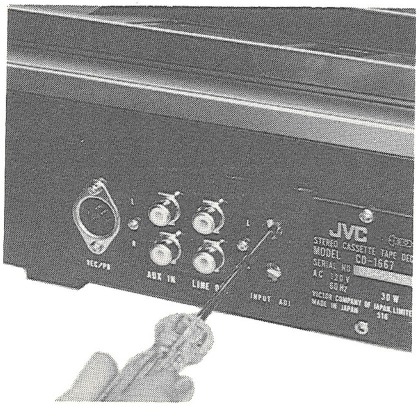


Fig. 13

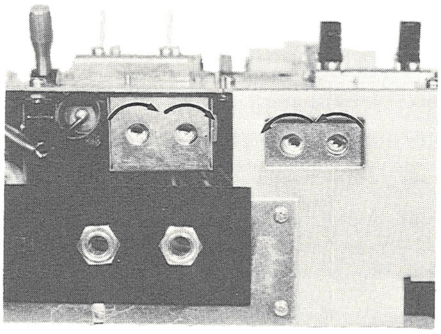
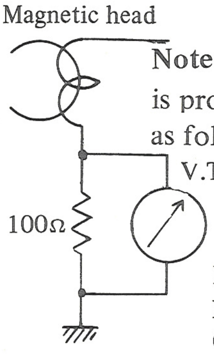


Fig. 14



Note: Bias current is properly measured as follows:

Bias current
Normal : 490μA
Chrome : 660μA

6–4. Mechanism Adjustment

1. Pinch roller pressure (Fig. 15)

Standard pressure: 350 ~ 450 g

If the pressure is not as specified, adjustment should be made by replacing the spring ⑳ or by changing the spring position.

2. Take-up torque (Figs. 15 and 16)

Standard torque: 40 ~ 70 gr.cm

If not as specified,

1) Replace the take-up idler arm ⑥.
2) Replace the take-up idler arm pressure spring.
3) Clean or replace the take-up belt ⑦.
4) Clean the right-side reel rubber outer surface, or replace the reel rubber.

3. Fast forward torque (Fig. 15)

Standard torque: 75 gr.cm or more

If not as specified,

1) Clean the right-side reel rubber outer surface, or replace the reel disc ass'y ㉑.
2) Clean the fast forward tire and idler, or replace the fast forward idler ass'y ㉒.
3) Clean the flywheel outer surface and belt.

4. Rewinding torque (Fig. 15)

Standard torque: 75 gr.cm or more

If not as specified,

1) Clean the left-side reel rubber outer surface, or replace the reel disc ass'y ㉓.
2) Clean the rewind tire ㉔.
3) Clean the flywheel outer surface and belt.

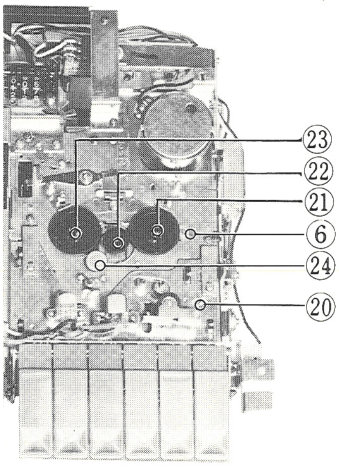


Fig. 15

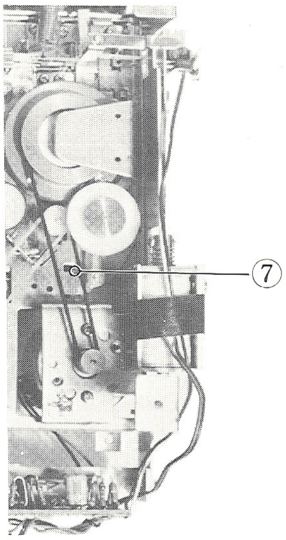


Fig. 16

7. Auto-Ejector

7–1. Theory of Detecting the Stop of Tape

As illustrated in Fig. 17, the turning force of the disc on the take-up side is carried to the counter, by which the toothed plate integrated with the counter pulley is turned. The plate is provided with the CdS detector element on the upper side and the lamp on the lower side. As the plate turns, the CdS detector element radiation is shut by the teeth of the rotating plate. Thus the radiation goes on and off quickly and transmits an AC signal to the subsequent circuit as a detecting signal.

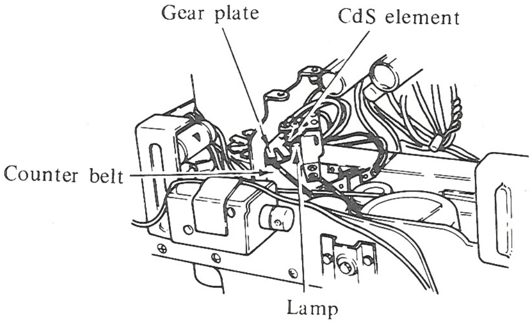


Fig. 17

7—2. Theory of Control Circuit Operation

This circuit consists of three transistors and two diodes as illustrated in Fig. 18.

The AC signal from the CdS detector element is amplified by X_2, and rectified through D_3 and D_4, then being charged to C_{12}. As C_{12} is charged, it causes the base voltage of X_3 to increase, and as a result, X_3 becomes conductive, but R_{11} (resistor) causes the voltage to drop. Because of this voltage drop, the base voltage also goes down, and X_4 cuts off the flow of current. Accordingly, no current flows through the plunger (solenoid) connected in series to the collector.

Next, when no signal is transmitted, C_{12} is not charged, and the base voltage of X_3 drops, making X_3 non-conductive. As a result, there will be no voltage drop resulting from R_{11}, and the base voltage of X_4 rises. This makes X_4 conductive and allowing the current to flow to the solenoid.

7—3. Operation of Mechanism

As the plunger moves up and down, it causes the slide bar to move. This slide bar movement releases the operating buttons from the locked position and also unlocks the cassette holder. As the cassette holder is unlocked, the operating buttons are held stopped by their respective springs, and the cassette holder is turned up.

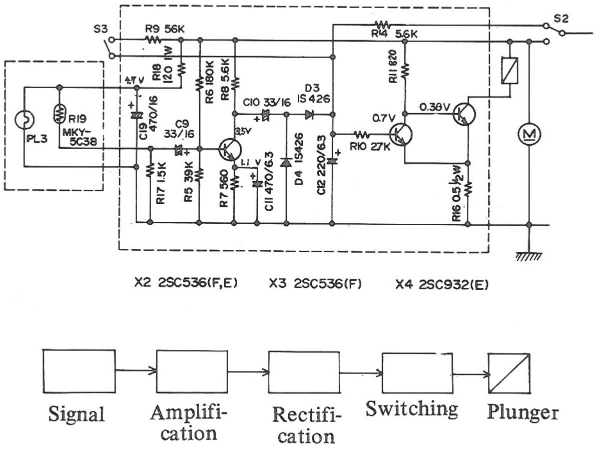


Fig. 18

7—4. Symptoms causes by operation theory of this mechanism

- The cassette is ejected quicker at the end of fast forward operation (or rewinding) than at the end of playback (or recording). This is caused by the difference in the level of the AC signal from the CdS detector element.
- With the pause button depressed, it is possible to fast forward and rewind the tape, but the control circuit is not in action. Therefore, the cassette is not ejected at the end of rewinding. Be sure to release the pause button before the fast forsard or rewinding operation. (If the cassette is not ejected at the end of the tape, the machine will be damaged.)
- Avoid depressing the playback, rewind or fast forward button before turning on the power switch. Otherwise, when the power switch is turned on, the cassette may be suddenly ejected, thus damaging the machine.

7—5. Check-ups and Adjustments

1. In case of disassembly or repair

If the disc, which is integrated with the counter pulley, keeps stopping, the cassette is ejected. It is required to check whether the toothed plate contacts the lamp, CdS detector element or the bracket, becuase the lamp is positioned very close to the CdS detector element. Also check the counter for smooth rotation after disassembly or repairs.

Since the CdS detector element tends to collect dust, clean it whenever repairs or adjustments are made.

2. Checking circuits for operation

When the rewinding operation approaches the end, the ejection of the cassette tends to occur. For this reason, it is necessary to check the control circuits for operation.

3. Mechanism section

If the load on the mechanism section is larger than the attraction of the plunger, the auto-ejection will not take place. In this case, check the following points:

1) Check to see if the slide bar ⑩ returns to its home position smoothly. Also check it for bends.
2) Check the operating button cam locks and moving parts for molibudenium grease.
3) Check the plunger position. If it is found shifted to the rear, adjust it correctly.
4) Check whether the lock lever ㉑ of the cassette holder ⑬ is too tight or not. If too tight, replace the cassette holder ⑬ and lock lever ㉑ .

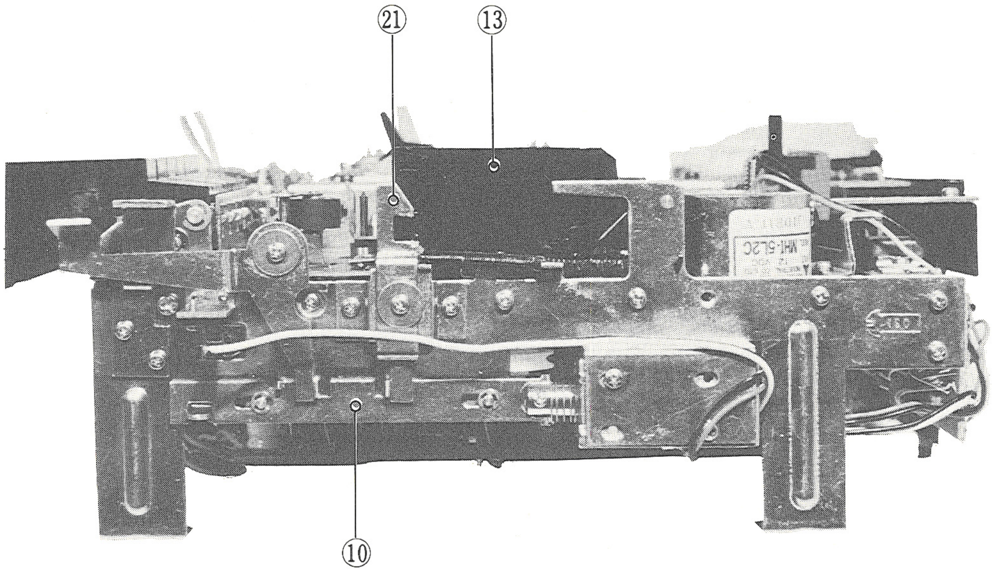


Fig. 19

8. Noise Reduction System

What is the ANRS circuit ?

ANRS stands for "Automatic Noise Reduction System".

Noise takes many forms, that is, noise produced in playback system, bias noise added in recording process, and bulk noise peculiar to the tape. The ANRS circuit is designed to reduce these noises without impairing the frequency characteristics unlike a conventional high-pass filter.

Theory of the ANRS circuit

In the ANRS circuit, when the recording signal level is high (that is, the recording level is at 0 VU), the recording ANRS circuit frequency characteristics show rather flat curves (See Fig. 20). But if the signal level is lower, the recording is made by stressing the intermediate and high range of frequency characteristics. That is, when the recording level is lower, the intermediate and high ranges are compressed. In this case, the bias noise is also recorded, irrespective of the recording characteristics. Accordingly, the signal/noise ratio is improved in proportion to the degree of compression. To be more precise, when the recording level is 40 dB lower than the standard level, improvement of the signal/noise ratio is 10 dB at 5 ~ 10 kHz.

But if the tape so recorded is played back, the low level signal is stressed at the intermediate and high range. Therefore, in the ANRS playback system, the characteristics opposite to those in the recording system is given to reduce the frequency characteristics of the low level signal at the intermediate and high range (See Fig. 21). That is, the intermediate and high range is expanded. In this way, the bulk noise on the tape and transistor noise on the playback amplifier are both reduced, and at the same time, the playback signal level is reduced to the original signal level. That is, without impairing the original signal, the noise is reduced as shown in Fig. 22.

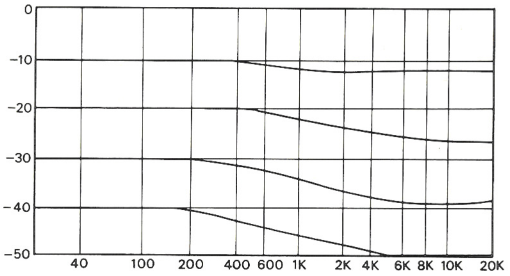


Fig. 20

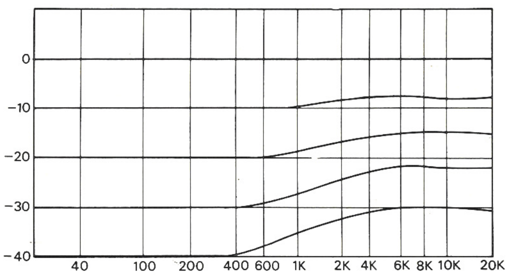
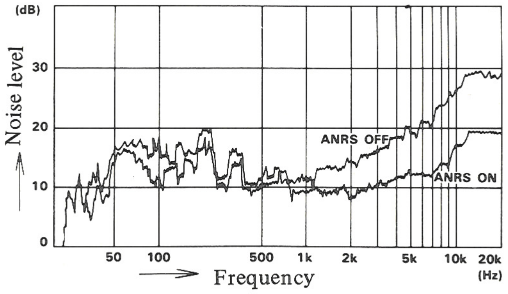


Fig. 21



Characteristic graph of noise level

Fig. 22

Function of Each Block

Refer to the block diagram.

Buffer Amplifier

This is the emitter follower (2SC1335). It is designed to reduce the influence to the first half stage of the system, and at the same time, make the filter circuit (consisting of the ANRS control circuit and non-linear control elements) operate correctly.

Non-Linear Control Elements and ANRS Control Circuit

As non-linear control elements, transistors X302 and X402, as well as 2SC1335, are used. As a DC V_{BE} is applied to the circuit between the transistors B and E, the impedance Z_{CE} between C and E is varied by the impressed voltage V_{BE} from ∞ up 10 Ω. This theory is also applied to the AGC circuit.

The high-pass filter is made up of the ANRS control circuit and the said variable impedance elements (Fig. 23). This high-pass filter has such frequency characteristics that they vary according to the value of the impressed voltage V_{BE}, as indicated in Fig. 24. Note that the high-pass filter has a loss of about 25 dB.

During the recording operation, a signal passes through this circuit, by which the intermediate and high frequencies are amplified. During the playback operation, the high-pass filter is inserted in the feedback loop of NF, and as a result, it serves as a low-pass filter having the reversed frequency characteristics.

Control Amplifier

The control amplifier is a circuit to generate the V_{BE} which is impressed to the transistors, that is, non-linear control elements. In this circuit, the signal voltage is amplified by IC (IC302 and 402), and a DC control voltage is produced by the voltage doubler rectification of diodes, D301, 302, 401, and 402.

This DC control voltage is varied by semi-fixed volume controls, R315 and 415. The rectifier circuit has constant circuits, C316, 416, R317 and 417 so that the control voltage has a proper transient characteristic. In addition, bias traps, L301, 401, C317 and 417, are provided to keep the ANRS circuit free from adverse effects caused by bias leaks.

As part of the control amplifier, it has a circuit, from which a DC bias is applied to transistors of variable impedance elements. This bias current can be varied by semi-fixed resistors, R320 and 420. If Z_{CE} is too great, the output of the high-pass filter exceeds 10 dB, and therefore, by adjusting the bias current, the output is kept at 10 dB.

Adjusting the ANRS Circuit

Measuring instruments required for adjustment:

Audio oscillator (OSC), attenuator (ATT), high-sensitivity vacuum tube voltmeter, and oscilloscope.

Connection:

Remove the wires of input side of the ANRS, and connect wires as illustrated in Fig. 25.

Adjustment:

1. Disconnect the red lead wire from the power source of the bias oscillation circuit. Turn on the ANRS switch, and push the record button.
2. Apply a frequency of 5 kHz –70 dB to the input of the ANRS circuit and adjust the semi-fixed resistor, R320 (R420) so that the output of the ANRS circuit is –60 dB.
3. Apply 5 kHz –70 dB to the same input so that the output of the semi-fixed resistor R315 (R415) is –45 dB.
4. Repeat the adjustment in 2. above.
5. Make sure that there is no deformation in the wave form.
6. Connect the lead (which is removed in 1. above) as it was.

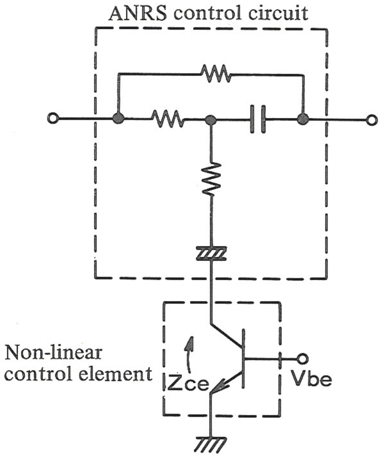

ANRS control circuit
Non-linear control element
Zce
Vbe

Fig. 23

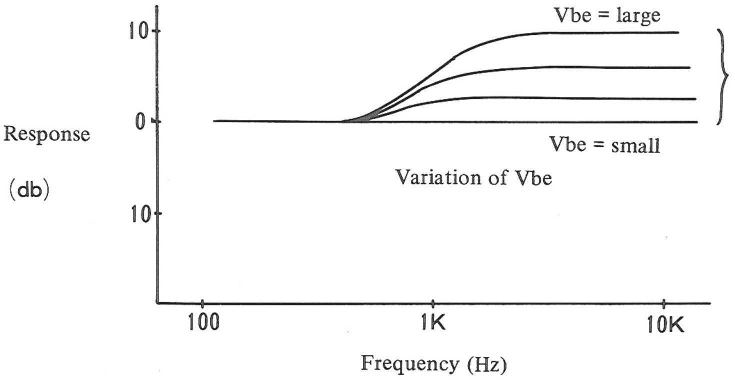


Fig. 24

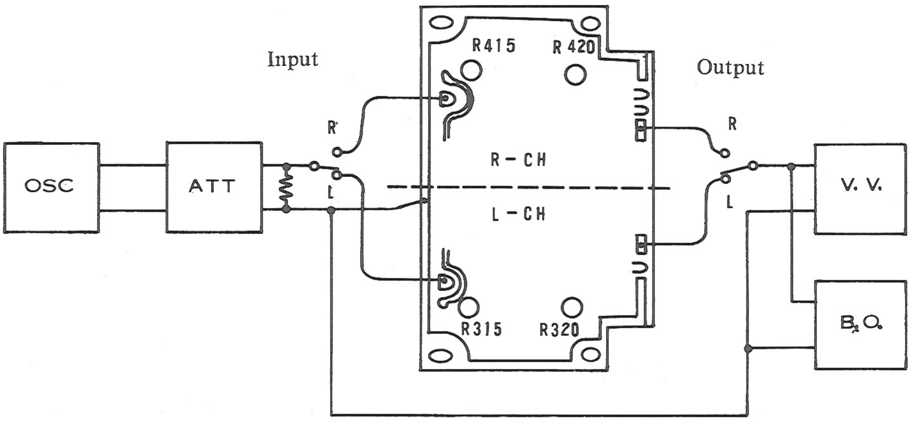

Input
Output
R415
R 420
R
L
R – CH
L – CH
R315
R320
OSC
ATT
V. V.
B. O.

Fig. 25

9. Connection Diagram

1. Amplifier Circuit Board & Tape Select Circuit Board

The numerals in circles ○ in the diagram are color codes of lead wires.

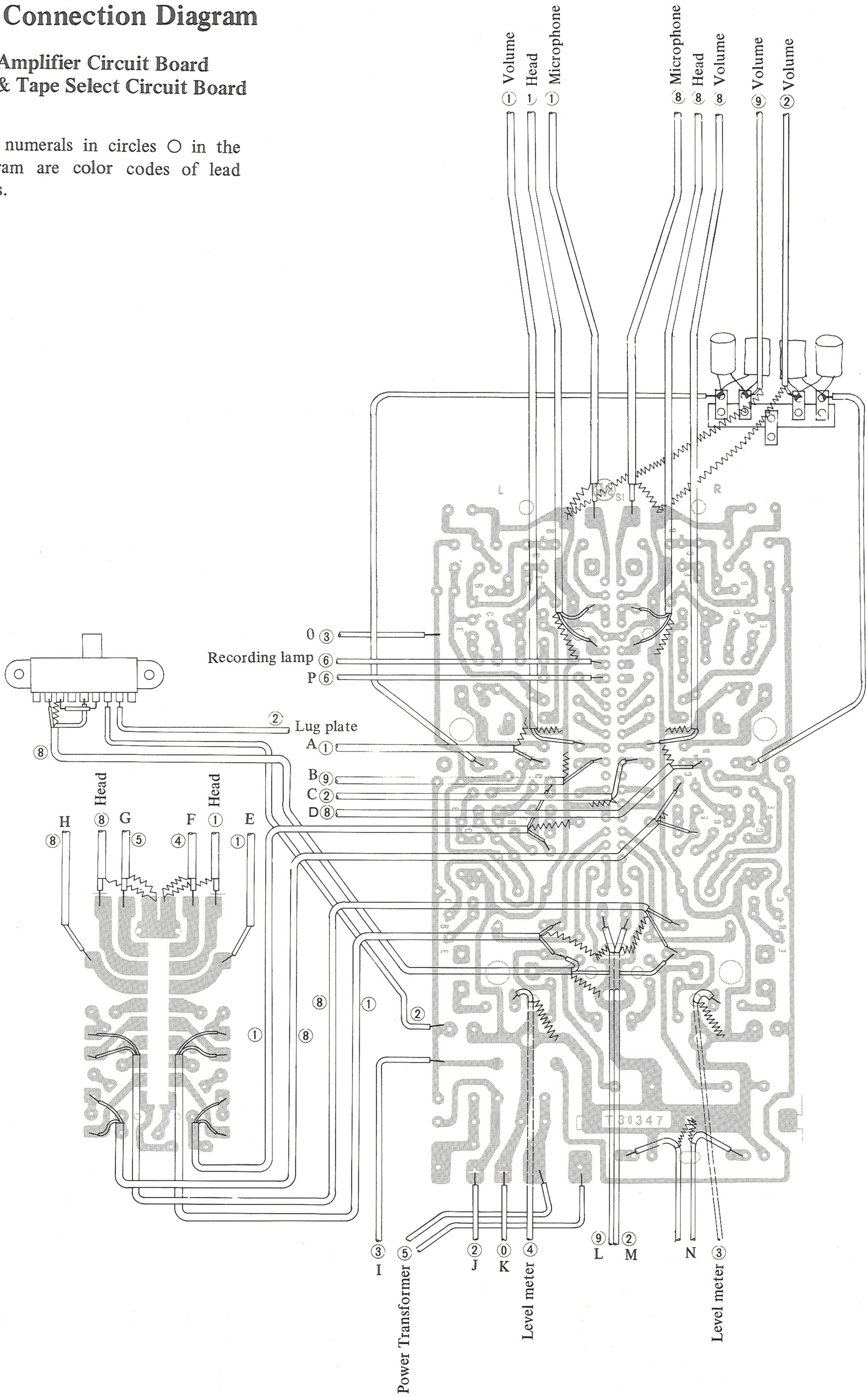
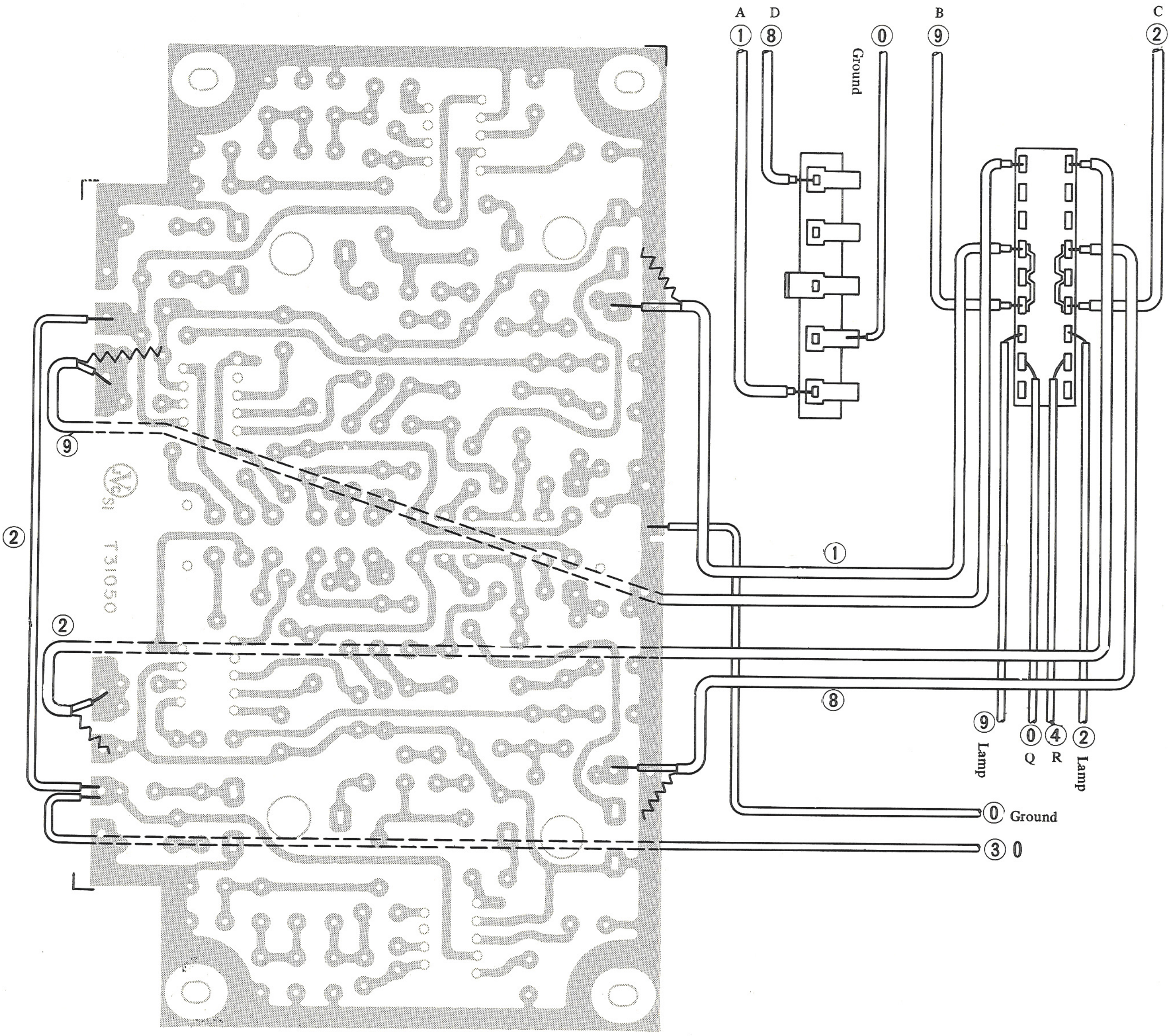

① Volume
① Head
① Microphone
⑧ Microphone
⑧ Head
⑧ Volume
⑨ Volume
② Volume
L
R
0 ③
Recording lamp ⑥
P ⑥
② Lug plate
A ①
B ⑨
C ②
D ⑧
⑧
H ⑧
Head ⑧
G ⑤
④ F
Head ①
E ①
①
⑧
⑧
①
②
T30347
③ I
⑤ Power Transformer
② J
⓪ K
④ Level meter
⑨ L
② M
N
③ Level meter

Fig. 26

2. ANRS Circuit Board


A
D
B
C
①
⑧
⓪
⑨
②
Ground
⑨
②
T31050
②
①
⑧
⑨
⓪
④
②
Lamp
Q
R
Lamp
⓪ Ground
③ 0

3. Input/Output Circuit Board

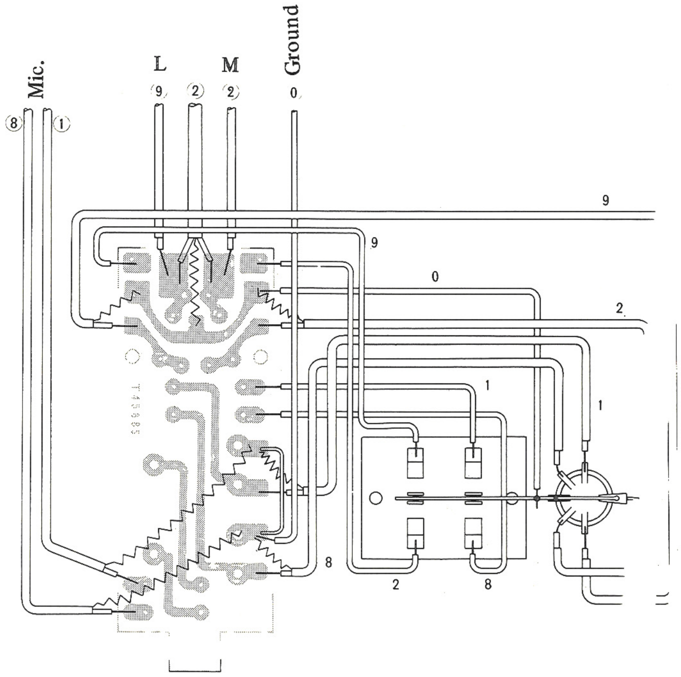

Mic.
⑧
①
L
M
Ground
⑨
②
②
0
9
9
0
2
1
1
8
2
8

Fig. 28

4. Power Source Circuit Board

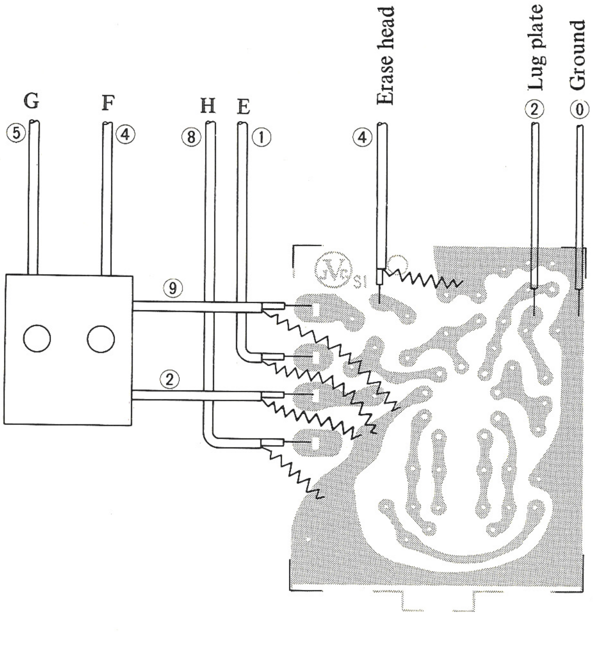

G
F
H
E
⑤
④
⑧
①
④
Erase head
② Lug plate
⓪ Ground
⑨
②
JVC
SI

Fig. 29

5. Eject Circuit Board

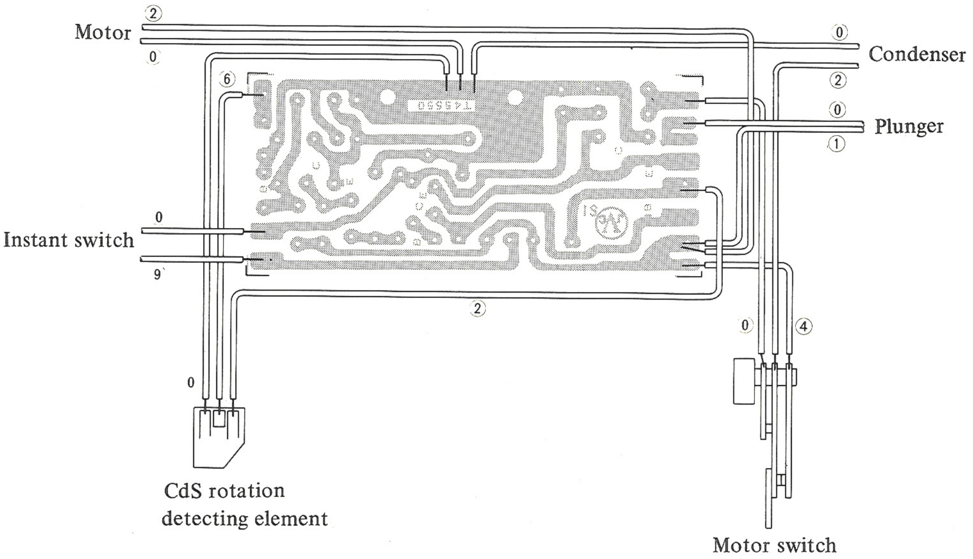

Motor
②
0
Condenser
⓪
②
Plunger
⓪
①
⑥
T45550
Instant switch
0
9
②
0
④
0
CdS rotation
detecting element
Motor switch

Fig. 30

6. Oscillation Circuit Board

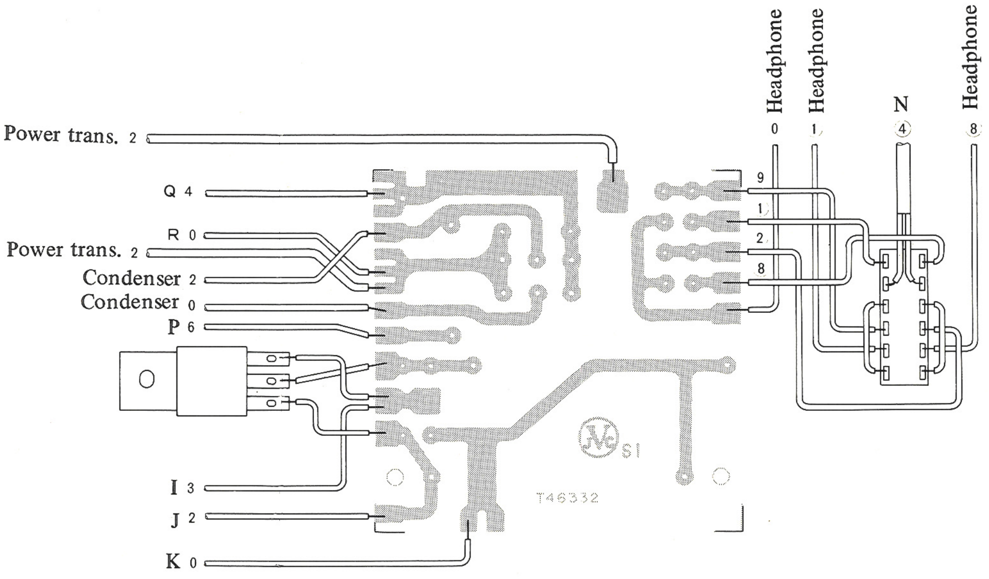

Power trans. 2
Q 4
R 0
Power trans. 2
Condenser 2
Condenser 0
P 6
I 3
J 2
K 0
Headphone 0
Headphone 1
N ④
Headphone 8
9
1
2
8
S1
T46332

Fig. 31

10. Block Diagram

Playback System Block Diagram

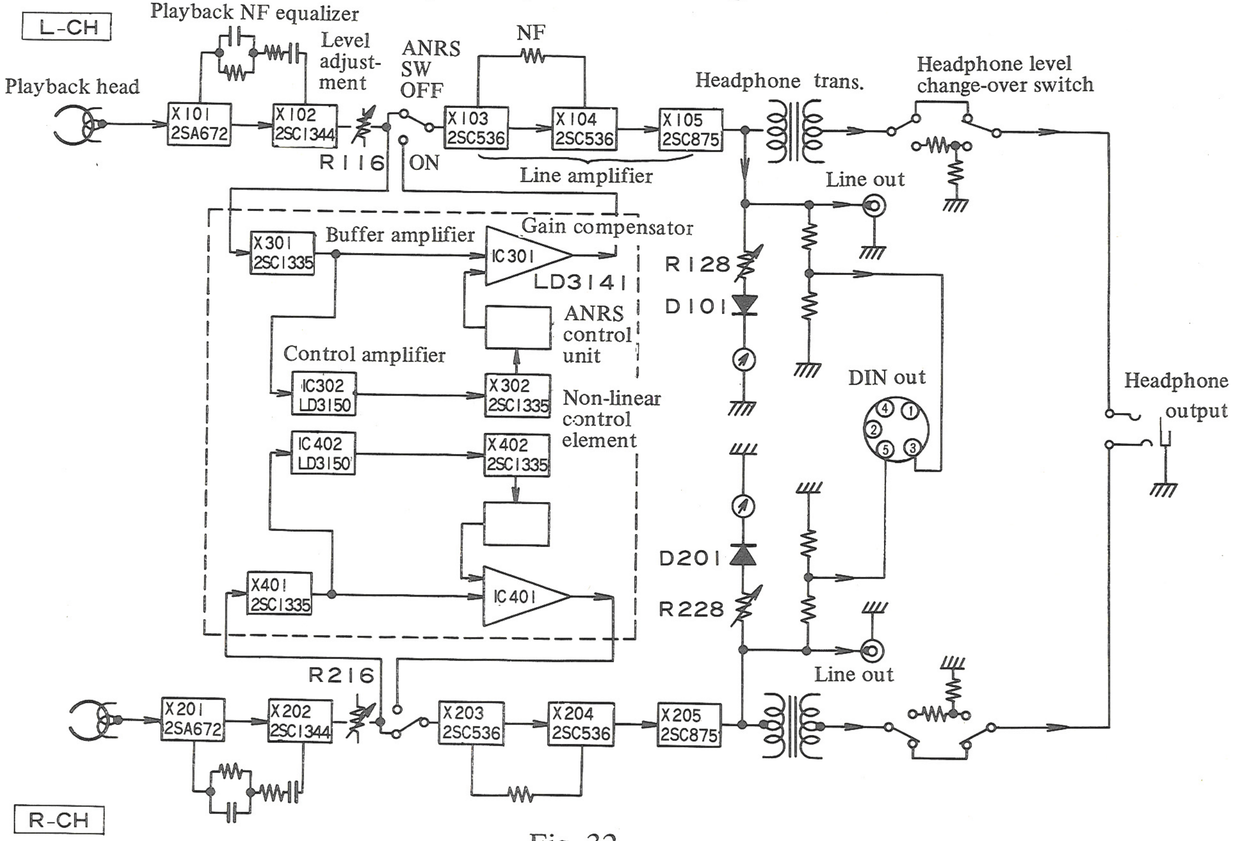

L-CH
Playback NF equalizer
Level adjust-ment
ANRS SW OFF
NF
Playback head
X101 2SA672
X102 2SC1344
X103 2SC536
X104 2SC536
X105 2SC875
Headphone trans.
Headphone level change-over switch
R116
ON
Line amplifier
Line out
X301 2SC1335
Buffer amplifier
Gain compensator
IC301
LD3141
R128
D101
ANRS control unit
Control amplifier
IC302 LD3150
X302 2SC1335
Non-linear control element
IC402 LD3150
X402 2SC1335
DIN out
Headphone output
X401 2SC1335
IC401
D201
R228
Line out
R216
X201 2SA672
X202 2SC1344
X203 2SC536
X204 2SC536
X205 2SC875
R-CH

Fig. 32

Recording System Block Diagram

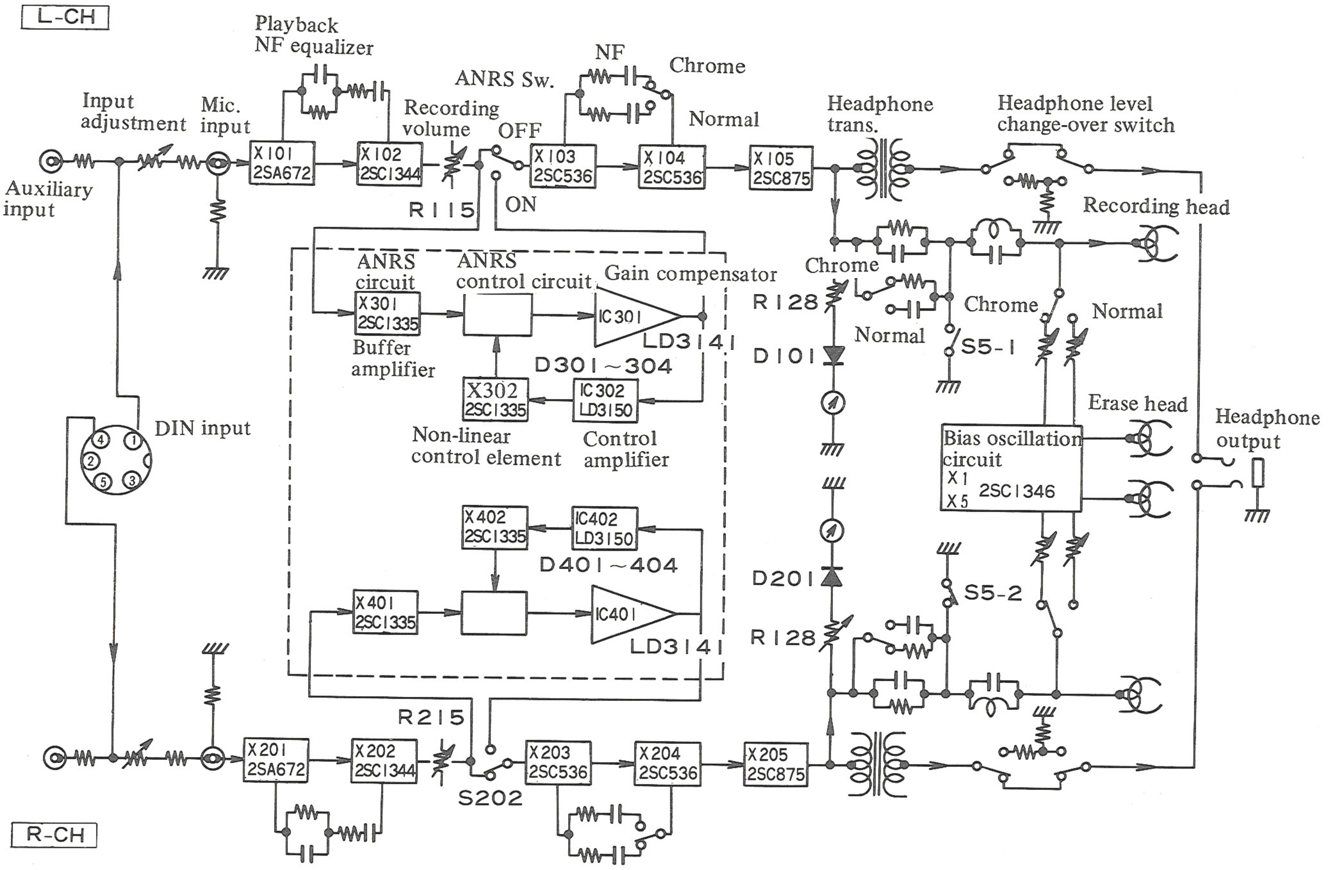

L-CH
Playback NF equalizer
NF
Chrome
ANRS Sw.
Input adjustment
Mic. input
Recording volume
OFF
Normal
Headphone trans.
Headphone level change-over switch
Auxiliary input
X101 2SA672
X102 2SC1344
X103 2SC536
X104 2SC536
X105 2SC875
R115
ON
Recording head
ANRS circuit
ANRS control circuit
Gain compensator
Chrome
X301 2SC1335
IC301
R128
Chrome
Normal
Buffer amplifier
LD3141
D101
Normal
S5-1
D301～304
X302 2SC1335
IC302 LD3150
Erase head
DIN input
Non-linear control element
Control amplifier
Bias oscillation circuit
X1
X5
2SC1346
Headphone output
X402 2SC1335
IC402 LD3150
D401～404
D201
S5-2
X401 2SC1335
IC401
R128
LD3141
R215
X201 2SA672
X202 2SC1344
X203 2SC536
X204 2SC536
X205 2SC875
S202
R-CH

Fig. 33

11.· Trouble Shooting

Electrical Circuit

1. Playback tone quality is poor.

1) Check the record/playback head for dust.
2) Check the record/playback head for wear.
   If worn excessively, the loss of treble response will result.
3) Check wiring for a short-circuit. Check each transistor for condition. (Check voltage according to the circuit board parts diagram.)
4) Check the noise reducing circuit for condition. (This check-up should be made by turning on and off the switch of the ANRS.)

2. Recording tone quality is poor.

The playback tone quality of a recorded tape such as the audition tape is good, but the recording by this unit produces poor tone quality. In this case, the unit should be checked in the following manner.

1) By monitoring a music while recording, check the tone quality.
2) If found poor, check the wiring of the recording system for a broken wire and short-circuit. Check transistors for function by measuring voltage.
3) If no irregularity is found, check the recording bias current according to 6–3 above. Also check the oscillation circuit.
4) Check the noise reducing circuit for operation.

3. For other failures, check the unit in the same manner as other amplifiers.

Mechanism Section

As for the torque and pressure of rollers, details are given in "Mechanism Adjustment" on page 00, and therefore, this section refers to the adjustement of wow and flutter.

Adjustments:

If wow and flutter increase, check the following points.

If there is a defect in revolving parts, the wow and flutter generated will increase in propotion to the number of revolutions. Play a 3000 Hz standard tape, and the defective part can be detected from the sound.

Defective Part	Symptom	Remedy
Capstans	Capstan shaft has excessive run-out.	Replace flywheel.
	Flywheel turns heavily (Shaft seisure, thrust play, etc)	Adjust flywheel holder.
Pinch rollers	Rough rotation (Deformation, scratches, or dust)	Replace pinch roller. Clean.
	Angle is incorrect.	Adjust so that it is parallel to capstan.
	Pressure is incorrect.	Adjust spring.
Take-up belt	Belt has undue run-out.	Replace take-up belt.
	Belt is dirty or slipery.	Clean or replace.
Back tension	Back tension is irregular, or back tension is too strong.	Replace supply disc. Replace back tension spring (under supply disc), or apply silicon grease.
Motor	Motor shaft has undue run-out.	Replace motor.
	Motor pulley is oily and dusty.	Clean motor pulley.
Take-up idler arm	Pulley has deflection. Pulley is stuck.	Replace take-up idler arm.

12. Cleaning and Oiling

1. Cleaning

Clean the contact surfaces of the record/playback head, capstan and pinch roller with the tape. If the head is dirty, tone quality will be greatly impaired, or erasure will be imperfect. Clean them with a cloth moistened with alcohol, benzine, or trichloroethylene.

Keep the cabinet free from these chemicals, or the surface will be dissolved.

2. Oiling

Feed one or two drops of D.T.E. oil or machine oil to the rewind roller shaft and pinch roller shaft once or twice a year under normal conditions of use.

Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

13. Appearnace Parts

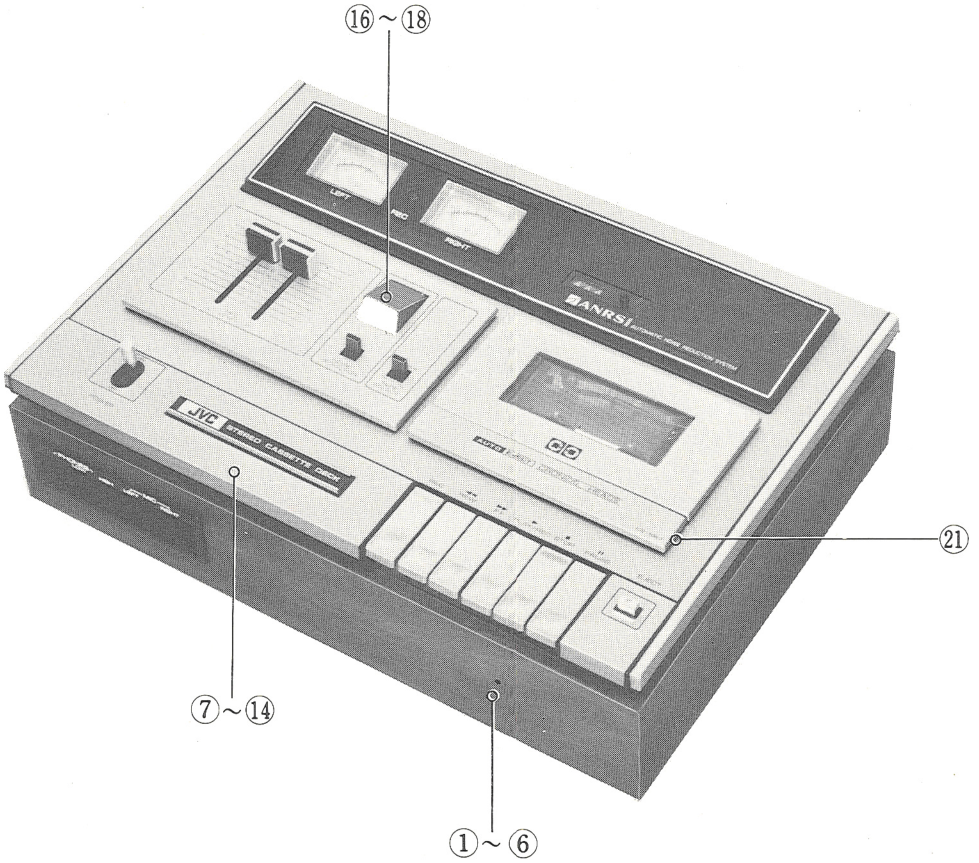

⑯～⑱
LEFT
REC
RIGHT
ANRS AUTOMATIC NOISE REDUCTION SYSTEM
JVC STEREO CASSETTE DECK
AUTO EJECT CRONICS HEADS
㉑
⑦～⑭
①～⑥

Fig. 34

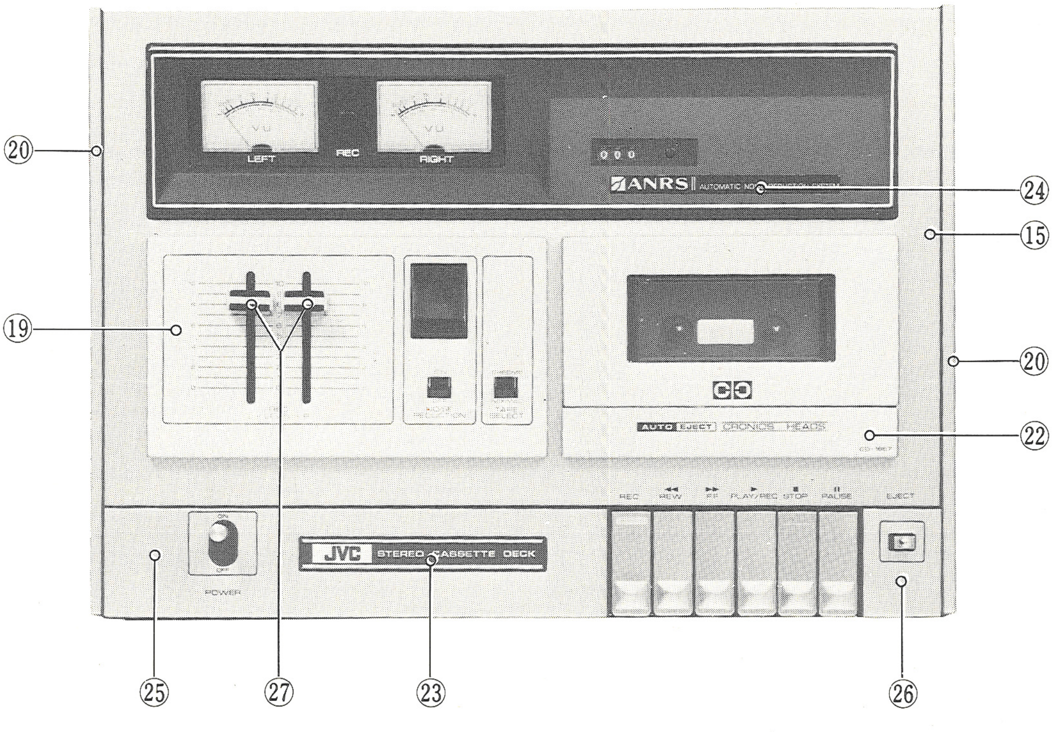

⑳
LEFT
REC
RIGHT
ANRS AUTOMATIC NOISE REDUCTION SYSTEM
㉔
⑮
⑲
NOISE REDUCTION
TAPE SELECT
⑳
AUTO EJECT CRONICS HEADS
CD-1667
㉒
REC
REW
FF
PLAY/REC
STOP
PAUSE
EJECT
ON
OFF
POWER
JVC STEREO CASSETTE DECK
㉕
㉗
㉓
㉖

Fig. 35

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
1	*T11417-001	Cabinet		1
2	Q05908-001	Foot		4
3	SPSP3016ZS	Screw		4
4	WNB3000	Washer		4
5	NTB3000ZS	Nut		4
6	*T31055-002	Escutcheon		1
1 ~ 6	*T11418-00B	Cabinet ass'y		1
7	*T11419-001	Panel		1
8	*T45874-001	Counter lens		1
9	*T45875-001	Lamp cover		1
10	T42005-002	Cassette button		1
11	T30301-003	Spring		1
12	T42006-001	Bracket		1
13	SBSB2606Z	Screw		1
14	*T46219-001	Volume net		1
7 ~ 14	*T22728-00A	Panel ass'y		1
15	*T22730-002	Front plate		1
16	*T45876-001	Cover		1
17	*T45877-004	Indicator		1
18	*R46725-001	Supporter		1
16 ~ 18	*T45878-00D	Cover ass'y		1
19	*T31177-001	Control plate		1
20	*T31057-002	Side plate		2
21	*T45879-001	Head cover		1
22	*T45880-002	Head cover plate	For CD-1667	1
22	*T45880-003	Head cover plate	For 1667U	1
23	*T46320-001	Mark (1)	For CD-1667	1
23	*T46957-001	Mark (1)	For 1667U	1
24	*T45883-001	Mark (2)		1
25	*T31178-002	Power plate		1
26	*T46321-002	Eject plate		1
27	E44363-001	Slide knob		2
28	Q03091-201	Washer	For securing cabinet rear	6
29	SPBP3012NS	Screw	For securing cabinet rear	6

14. Circuit Board Parts

1. Amplifier Circuit Board

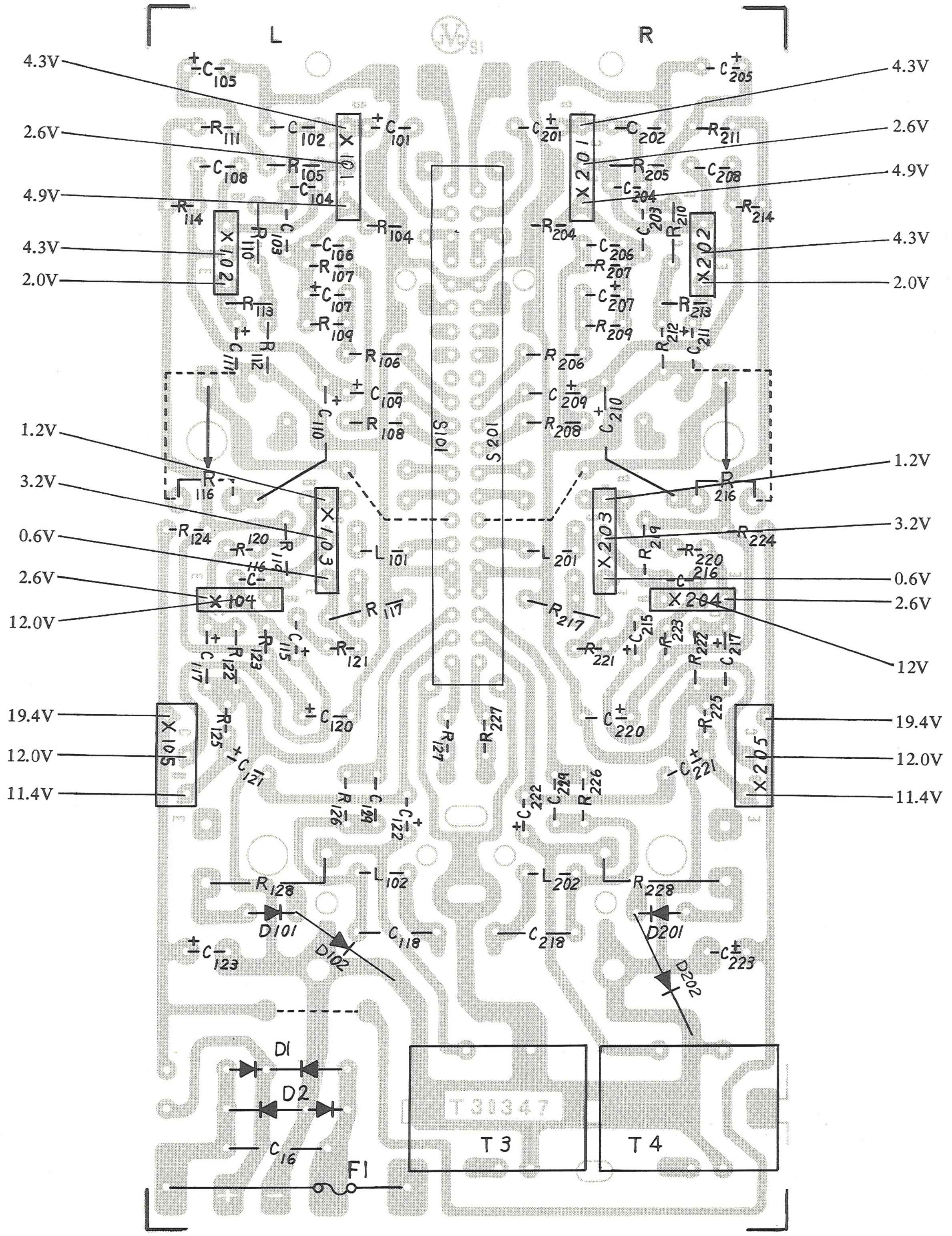

L
R
4.3V
2.6V
4.9V
4.3V
2.0V
1.2V
3.2V
0.6V
2.6V
12.0V
19.4V
12.0V
11.4V
4.3V
2.6V
4.9V
4.3V
2.0V
1.2V
3.2V
0.6V
2.6V
12V
19.4V
12.0V
11.4V
X101
X102
X103
X104
X105
X201
X202
X203
X204
X205
S101
S201
L101
L102
L201
L202
D101
D102
D201
D202
D1
D2
C16
F1
T3
T4
T30347
C101
C102
C103
C104
C105
C106
C107
C108
C109
C110
C111
C115
C116
C117
C118
C120
C121
C122
C123
C124
C201
C202
C203
C204
C205
C206
C207
C208
C209
C210
C211
C215
C216
C217
C218
C220
C221
C222
C223
C229
R104
R105
R106
R107
R108
R109
R110
R111
R112
R113
R114
R116
R117
R119
R120
R121
R122
R123
R124
R125
R126
R127
R128
R204
R205
R206
R207
R208
R209
R210
R211
R212
R213
R214
R216
R217
R219
R220
R221
R222
R223
R224
R225
R226
R227
R228
+
−

Fig. 36

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	T30347-001	Amplifier circuit board		1
R125,225	Q04802-560	Carbon resistor		2
R110,210	Q04802-150K	Carbon resistor		2
R121,221	Q04802-15K	Carbon resistor		2
R126,226	Q04802-22K	Carbon resistor		2
R107,207	Q04802-330K	Carbon resistor		2
R108,208	Q04802-18K	Carbon resistor		2
R109,209	Q04802-22K	Carbon resistor		2
R111,211	Q04802-100K	Carbon resistor		2
R120,220	Q04802-150K	Carbon resistor		2
R123,127,223,227	Q04802-680	Carbon resistor		4
R112,212	Q04802-1K	Carbon resistor		2
R113,213	Q04802-2.2K	Carbon resistor		2
R114,214	Q04802-18K	Carbon resistor		2
R117,217	Q04802-560	Carbon resistor		2
R119,219	Q04802-12K	Carbon resistor		2
R122,222	Q04802-270	Carbon resistor		2
R124,224	Q04802-100	Carbon resistor		2
R106,206	Q04802-10K	Carbon resistor		2
R128,228	Q04843-5	Variable resistor	1kΩ (B)	2
R116,216	Q04847-5	Variable resistor	20kΩ (B)	2
C101,201,122,222	Q03108-5	Electrolytic capacitor	4.7μF/16V	4
C102,202	Q44353-820	Ceramic capacitor	820P	2
C103,203	Q03286-131	FM capacitor	130P	2
C104,204	Q03286-300	FM capacitor	30P	2
C105,205	Q03108-100	Electrolytic capacitor	100μF/16V	2
C109,115,209,215	Q03108-3	Electrolytic capacitor	3.3μF/16V	4
C108,208	Q04305-82	Ceramic capacitor	82P	2
C110,210	Q03110-1	Electrolytic capacitor	1μF/25V	2
C111,211	Q03104-30	Electrolytic capacitor	33μF/6.3V	2
C117,217	Q03104-100	Electrolytic capacitor	100μF/6.3V	2
C120,123,220,223	Q03110-500	Electrolytic capacitor	470μF/25V	4
C121,221	Q03110-30	Electrolytic capacitor	33μF/25V	2
C106,206	Q03244-682	Mylar capacitor	6800P	2
C116,216	Q04305-150	Ceramic capacitor	270P	2
C107,207	Q03194-224	Solid aluminum capacitor	0.40μF/10V	2
C118,218	Q03286-151	FM capacitor	150P	2
C129,229	Q04051-510	Ceramic capacitor	510P	2
C16	Q42309-01U	Ceramic capacitor	0.01μF	1
L102,202	T40442-1	Inductor	18mH	2
L101,201	T40442-7	Inductor	6.8mH	2
S101,201	T30349-001	Slide switch		1
X101,201	2SC1344EF	Transistor	(Hitachi)	2
X102,202	2SC1355FE	Transistor	(Hitachi)	2
X103,104,203,204	2SC536FE	Transistor	(Sanyo)	4
X105,205	2SC875ED	Transistor	(Sanyo)	2
D101,201	1S426	Diode	(Sanyo)	2
T3,4	T42698-001	Output transformer		2
D1	T42692-001	Rectifier	10DC-1	1
D2	T42692-01R	Rectifier	10DC-1R	1
F1	04112-0.8P	Fuse	0.8A	1

2. ANRS Circuit Board

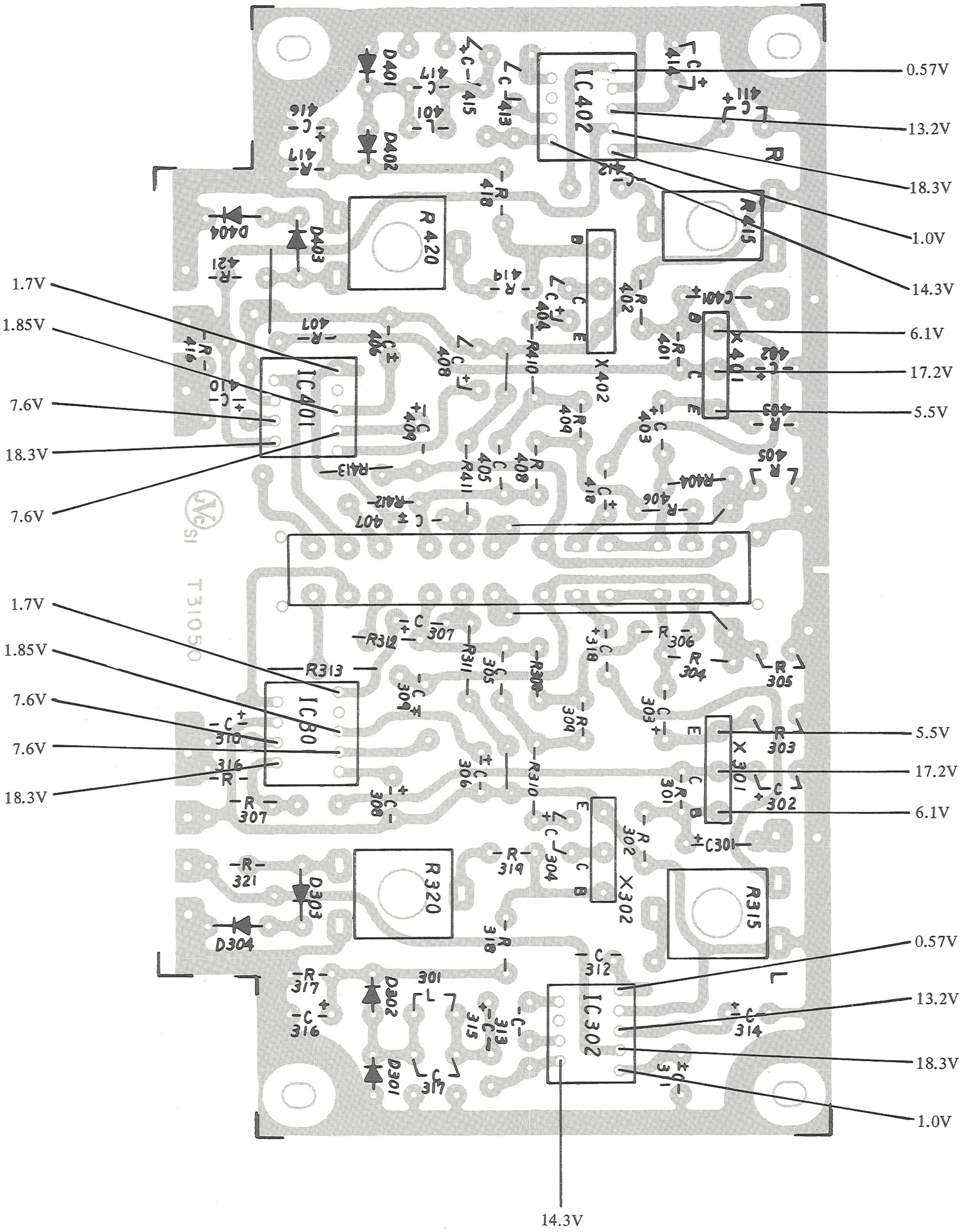

0.57V
13.2V
18.3V
1.0V
14.3V
6.1V
17.2V
5.5V
1.7V
1.85V
7.6V
18.3V
7.6V
1.7V
1.85V
7.6V
7.6V
18.3V
5.5V
17.2V
6.1V
0.57V
13.2V
18.3V
1.0V
14.3V
IC402
IC401
IC301
IC302
X401
X402
X301
X302
R420
R415
R320
R315
D401
D402
D403
D404
D301
D302
D303
D304
R
L
T3105
SI

Fig. 37

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	*T31050-001	ANRS circuit board		1
S301,401	*T30251-003	Slide switch		1
R306,406	Q04802-100	Carbon resistor		2
R310,410	Q04802-330	Carbon resistor		2
R305,405	Q04802-560	Carbon resistor		2
R312,412	Q04802-1.8K	Carbon resistor		2
R321,421	Q04802-3.3K	Carbon resistor		2
R311,411	Q04802-3.9K	Carbon resistor		2
R309,409	Q04802-4.7K	Carbon resistor		2
R303,403	Q04802-6.8K	Carbon resistor		2
R319,419	Q04802-8.2K	Carbon resistor		2
R304,404	Q04802-10K	Carbon resistor		2
R318,418	Q04802-12K	Carbon resistor		2
R313,413	Q04802-33K	Carbon resistor		2
R308,408	Q04802-56K	Carbon resistor		2
R302,402	Q04802-68K	Carbon resistor		2
R316,416	Q04802-100K	Carbon resistor		2
R301,401	Q04802-120K	Carbon resistor		2
R320,420	Q04843-5	Variable resistor	1kΩ (B)	2
R315,415	Q04846-6	Variable resistor	10kΩ (B)	2
C308,408,314,414	Q03104-100	Electrolytic capacitor	100µF/6.3V	4
C303,403	Q03106-30	Electrolytic capacitor	33µF/10V	2
C301,304,307,309, 315,401,404,407, 409,415,318,418	Q03108-10	Electrolytic capacitor	10µF/16V	12
C311,411	Q03108-100	Electrolytic capacitor	100µF/16V	2
C316,416	Q03110-4.7	Electrolytic capacitor	4.7µF/25V	2
C310,410	Q03194-224	Solid aluminum capacitor	0.22µF	2
C302,306,402,406	Q03110-100	Electrolytic capacitor	100µF/25V	4
C305,405	Q03244-153	Mylar capacitor	0.015µF	2
C313,413	Q04305-39	Ceramic capacitor	39P	2
C312,412	Q04305-68	Ceramic capacitor	68P	2
IC302,402	*LD3150-V	IC (Integrated circuit)	(Sanyo)	2
IC301,401	*LD3141-V	IC (Integrated circuit)	(Sanyo)	2
X301,401	2SC1335EF	Silicon transistor	(Hitachi)	2
X302,402	2SC1335F	Silicon transistor	(Hitachi)	2
D303,304,403,404	T30155-001	Silicon diode	10D-1	4
D301,302,401,402	1S426	Germanium diode		4
R307,407	Q04802-1K	Carbon resistor		2
C317,417	Q03286-151	FM capacitor	150P	2
L301,401	T40442-1	Inductor	18mH	2
	Q03244-182	Mylar capacitor	1800P	2

3. Power Source Circuit Board

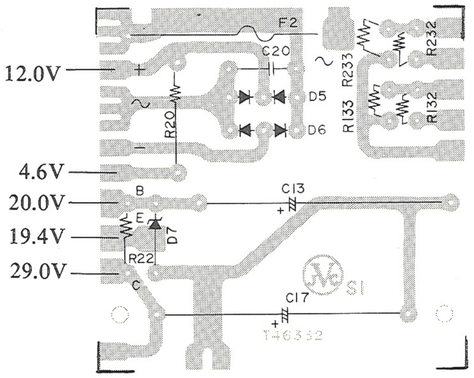

12.0V
4.6V
20.0V
19.4V
29.0V
F2
C20
D5
D6
R20
R233
R232
R133
R132
B
E
C
C13
D7
R22
C17
S1
T46352

Fig. 38

4. Oscillation Circuit Board

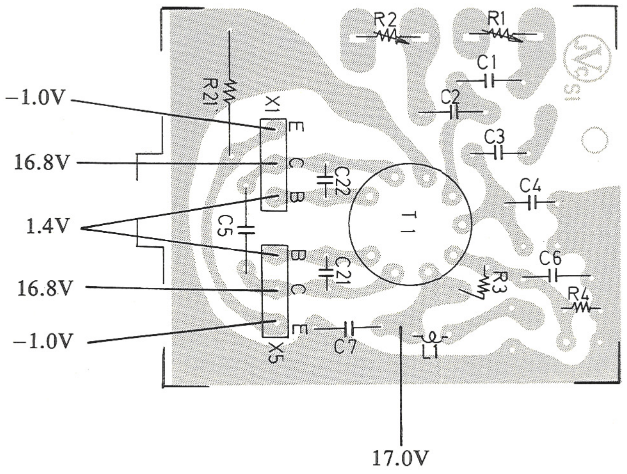
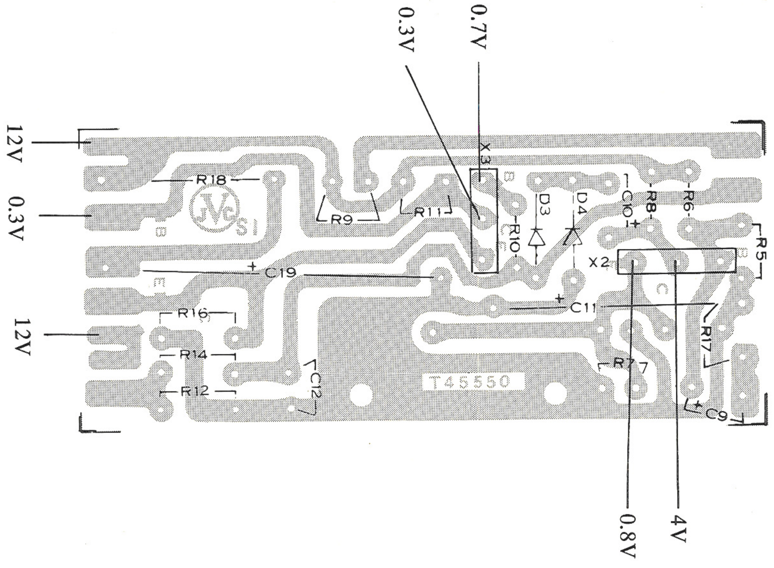

−1.0V
16.8V
1.4V
16.8V
−1.0V
17.0V
R2
R1
C1
C2
C3
C4
C6
R3
R4
R21
X1
E
C
B
C22
C5
T1
B
C
E
C21
C7
L1
X5
S1

Fig. 39

5. Eject Circuit Board


0.3V
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12V
0.3V
12V
0.8V
4V
R18
R9
R11
X3
D3
D4
C10
R8
R6
R5
R10
X2
C19
C11
R17
R16
R14
R12
C12
R7
C9
T45550
S1

Fig. 40

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	*T46332-001	Circuit board		1
D_5	T42692-001	Rectifier	10DC-1	1
D_6	T42692-01R	Rectifier	10DC-1R	1
D_7	IN4748	Zener diode	20V	1
$R_{132,232}$	Q04802-4.7	Carbon resistor		2
$R_{133,233}$	Q04802-4.7	Carbon resistor		2
R_{20}	04092-120	Composition resistor	120Ω	1
R_{22}	Q04800-820	Carbon resistor	1W	1
C_{13}	Q03109-500	Electrolytic capacitor	470μF/25V	1
C_{17}	Q03137-500	Electrolytic capacitor	470μF/35V	1
C_{20}	Q42309-01	Ceramic capacitor	0.01μF	1
F_2	04112-1.8P	Fuse	1.8A	1

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	*T45884-001	Circuit board		1
T_1	T30554-001	Oscillation coil		1
R_3	Q04802-10K	Carbon resistor	1/4W	1
R_4	Q04802-1.2K	Carbon resistor	1/4W	1
R_{21}	Q04804-33	Carbon resistor	1/2W	1
$R_{1,2}$	Q04851-4	Variable resistor	500kΩ	2
C_3	Q03213-103	Polypropirene capacitor	0.01μF	1
C_4	Q03244-104	Mylar capacitor	0.1μF	1
C_5	Q42309-6800	Ceramic capacitor	6800P	1
$C_{6,7}$	Q46962-04	Ceramic capacitor	0.047μF	2
$C_{21,22}$	Q04072-100	Ceramic capacitor	100pF	2
$C_{1,2}$	Q03287-221	FM capacitor	220pF	2
L_1	T40442-002	Inductor	10μH	1
$X_{1,5}$	2SC1346RS	Silicon transistor	(Matsushita)	2

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	T45550-001	Circuit board		1
$X_{2,3}$	2SC536	Transistor	X_2 (E,F), X_3 (F)	2
$C_{9,10}$	Q03108-30	Electrolytic capacitor	33μF/16V	2
C_{19}	Q03107-500	Electrolytic capacitor	470μF/16V	1
C_{11}	Q03103-500	Electrolytic capacitor	470μF/6.3V	1
C_{12}	Q03104-200	Electrolytic capacitor	220μF/6.3V	1
R_6	Q04802-180K	Carbon resistor		1
R_5	Q04802-39K	Carbon resistor		1
R_7	Q04802-560	Carbon resistor		1
R_8	Q04802-5.6K	Carbon resistor		1
R_{10}	Q04802-2.7K	Carbon resistor		1
R_{11}	Q04802-820	Carbon resistor		1
R_9	Q04802-33K	Carbon resistor		1
R_{18}	04092-120	Composition resistor	120Ω 1W	1
R_{16}	Q04762-0.5	Wound resistor	0.5Ω 1/2W	1
$D_{3,4}$	1S426	Diode		2
R_{17}	Q04802-1.5K	Carbon resistor		1
R_{14}	Q04802-5.6K	Carbon resistor		1
R_{12}	Q04802-2.7K	Carbon resistor		1

6. Input/Output Circuit Board

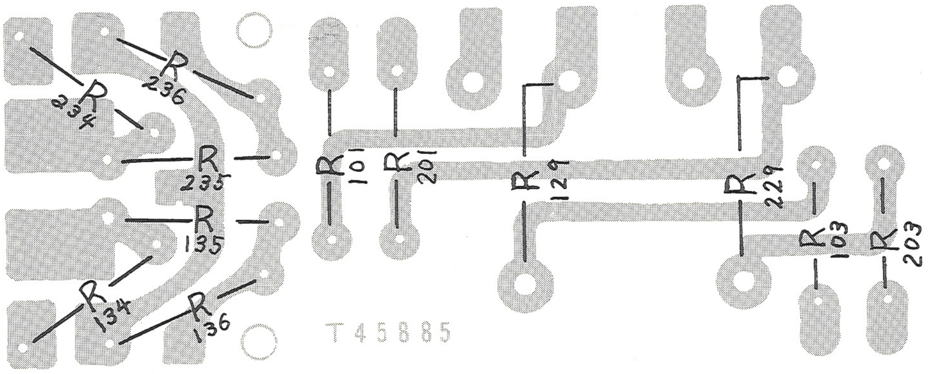
R 236
R 234
R 235
R 135
R 134
R 136
T45885
R 101
R 201
R 129
R 229
R 103
R 203

Fig. 41

7. Tape Select Circuit Board

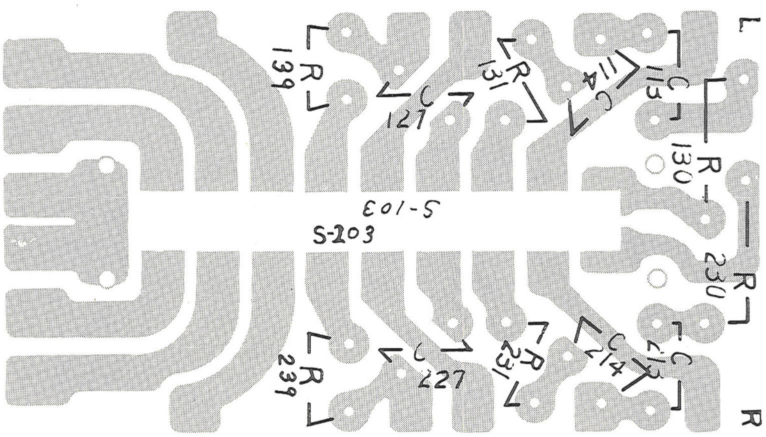
L
R 139
C 121
R 131
C 114
C 113
R 130
S-103
S-203
R 230
R 239
C 227
R 231
C 214
C 213
R

Fig. 42

15. Electrical Parts Except Circuit Board

1. Chassis Front

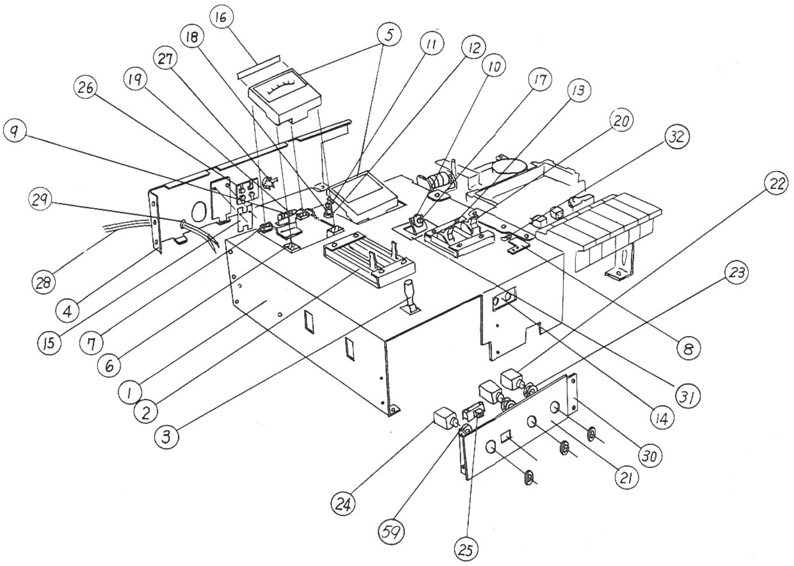
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Fig. 43

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	*T45885-001	Circuit board		1
$R_{129,229}$	Q04849-7	Variable resistor	100kΩ (B)	2
$R_{101,201}$	Q04800-330K	Carbon resistor		2
$R_{103,203}$	Q04793-8.2K	Carbon resistor		2
$R_{135,235}$	Q04800-10K	Carbon resistor		2
$R_{134,234}$	Q04800-3.3K			2
$R_{136,236}$	Q04800-10K			2

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	*T46334-001	Circuit board		1
$S_{103,203}$	*QSL6235-001	Lever slide switch		1
$C_{113,213}$	Q03244-123	Mylar capacitor	0.012μF	2
$C_{114,214}$	Q03244-153	Mylar capacitor	0.015μF	2
$R_{139,239}$	Q04802-180K	Carbon resistor		2
$C_{128,228}$	Q04305-470	Ceranic Capacitor	470pF	2
$R_{130,230}$	Q04800-150	Carbon resistor		2
$R_{131,231}$	Q04802-150	Carbon resistor		2

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
1	*T22725-003	Chassis base		1
2	Q30337-001	Slide variable resistor	$R_{115,215}$ 50kΩ (B)	2
3	*QSU1120-003	Lever switch	Power sonrce S_1	1
3	QSL1235-031	Lever Switch	Power source S. For 1667U	1
4	T31049-001	Jack bracket (B)		1
5	*T31058-001	Level meter		2
6	*T44741-006	Cushion		4
7	*T42708-002	Cushion		4
8	T42691-001	Terminal board		1
9	T46821-002	Lamp		2
10	F6041-001	Bushing		1
11	T46729-001	Lamp	For recording PL-4	1
12	53492	Rubber bushing		1
13	*QSL6235-001	Lever slide switch	$S_{102,202}$	1
14	T30355-001	Shield case		1
15	T46251-001	Shield plate		1
16	T45364-001	Film plate		2
17	T46821-001	Lamp	PL-5 (ANRS)	1
18	F6130-001	Tube		1
19	*T45961-001	Lamp holder		2
20	QSL6235-001	Lever slide switch	$S_{103,203}$	1
21	*T45887-001	Jack board	T46112-002 from machines #301 and upward	1
22	QMS0303-003	Jack ass'y	(Mic) $J_{101,201}$ QMS0303-003	2
23	T40524-001	Insulator		2
24	QMS6301-008	Jack ass'y	(Headphone) J_2	1
25	T30247-001	Slide switch	$S_{104,204}$	1
26	T30233-001	PIN jack ass'y	$J_{102,103,202,303}$	1
27	Q03967	DIN socket ass'y	J_1	1
28	Q03056-13	Power cord		1
29	T41336-001	Cord stopper		1
30	*T45851-002	Jack bracket (A)		1
31	T46209-001	Sheet		1
32	51739-2	Lug		1
33	T30962-00A	Voltage select switch	For 1667U	1

2. Chassis Rear

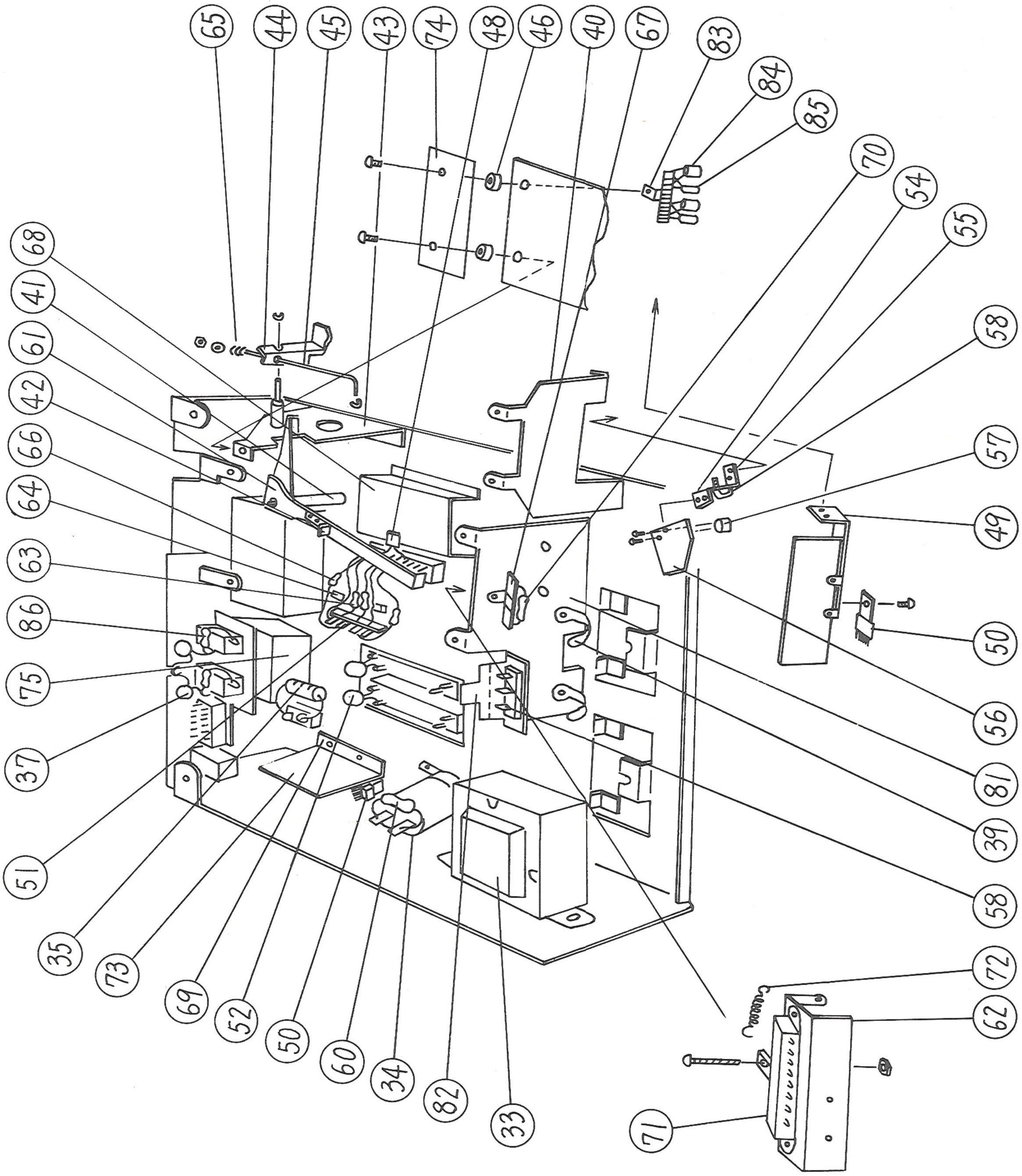
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Fig. 44

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	SPSP2004Z	Screw		4
	SPSP2604Z	Screw		2
	SPSP2606N	Screw		2
	SPSP2606Z	Screw		2

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
33	*T31180-001	Power Transformer	T-2 For CD-1667	1
33	T31302-001	Power transformer	T-2 For 1667U	1
34	*T42704-002	Electrolytic capacitor	C_{15} 4000μF/16V	1
35	*QFH72EM-223	M.M. capacitor	C_{18} For CD-1666	1
35	QFH53AM-223	M.M. capacitor	C_{18} For 1667U	1
36	Q04802-3.9K	Carbon resistor	$R_{102,202}$	2
37	Q046962-01	Ceramic capacitor	$C_{124,224}$ 0.01μF	2
38	*T45787-001	Bracket		1
39	S4709-002	Wire clamp		
40	*T45771-001	Bracket		1
41	*T45781-001	Stud		1
42	*T46489-00A	Recording lever ass'y		1
43	*T45888-00A	Bracket ass'y		1
44	*T45776-001	Recording lever		1
45	*T42702-002	Recording rod		1
46	T42706-001	Spacer		2
47				
48	Q03194-224	Solid aluminum capacitor	$C_{125,225}$	2
49	*T45777-001	Bracket		1
50	2SC932	Transistor	X_4 (Sanyo) E rank	2
51	Q03007-53	Lug strip		1
52	Q04305-220	Ceramic capacitor		2
53	T45563-001	Lamp bracket		1
54	T45566-001	Lamp holder		1
55	T45614-001	Terminal board		1
56	*T45616-001	CdS photo cell	R_{19}	1
57	T46729-002	Pilot lamp	PL3	1
58	T42693-001	Terminal board	For 1667U	1
58	T42693-00B	Terminal board	For CD-1667	1
59	Q03091-143	Washer		2
60	Q04781-270	Wire wound resistor	R_{15} 2W 270Ω	1
61	T46584-001	Kick bracket		1
62	T46588-001	Switch bracket		1
63	Q04800-82K	Carbon resistor	$R_{118,218}$	2
64	Q03106-10	Electrolytic capacitor	10μF/16V $C_{126,226}$	2
65	T7159-001	Spring		1
66	Q04800-100K	Carbon resistor	$R_{137,237}$	2
67	Q03007-33	Lug strip		1
68	*T46331-001	Shield cover		1
69	*T46330-001	Bracket		1
70	04090-68	Composition resistor	R_{25}	1
71	QSS0031-001	Slide switch	QSS0031-001	1
72	*T30300-064	Spring		1
73	*T46332-001	Circuit board		1
74	T43634-001	Shield plate		1
75	T46336-001	Shield case		8
76	Q03007-53	Lug strip ass'y		1
77	T40442-07	Inductor	$L_{103,203}$	2
78	Q03244332	Mylar capacitor	$C_{112,212}$	2
	Q03091-141	Washer		8
	Q04851-5	Variable resistor (semi-fixed)	$R_{23,24}$ 500kΩ	2
	T42547-005	Fuse seal	(800mA)	1
	T42547-006	Fuse seal	(1.8A)	1
	LPSP2606Z	Screw		25
	LPSP2608E	Screw		2
	LPSP2608Z	Screw		2
	LPSP3006ZS	Screw		13

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	SPSP2608N	Screw		7
	SPSP2610	Screw		2
	WNS3000N	Washer		2
	WNS2600N	Washer		2
	NWB2600	Washer		4
	WLS2000	Lock washer		2
	WLS2600	Lock washer		2
	WBS2600	T-lock washer		2
	REE2500	E ring		2
	REE1500	E ring		2
	NTB2000	Nut		2
	NTB2600	Nut		2
	NTB3000S	Nut		3
	NTB3006S	Nut		3

16. Mechanical Parts

1. Chassis

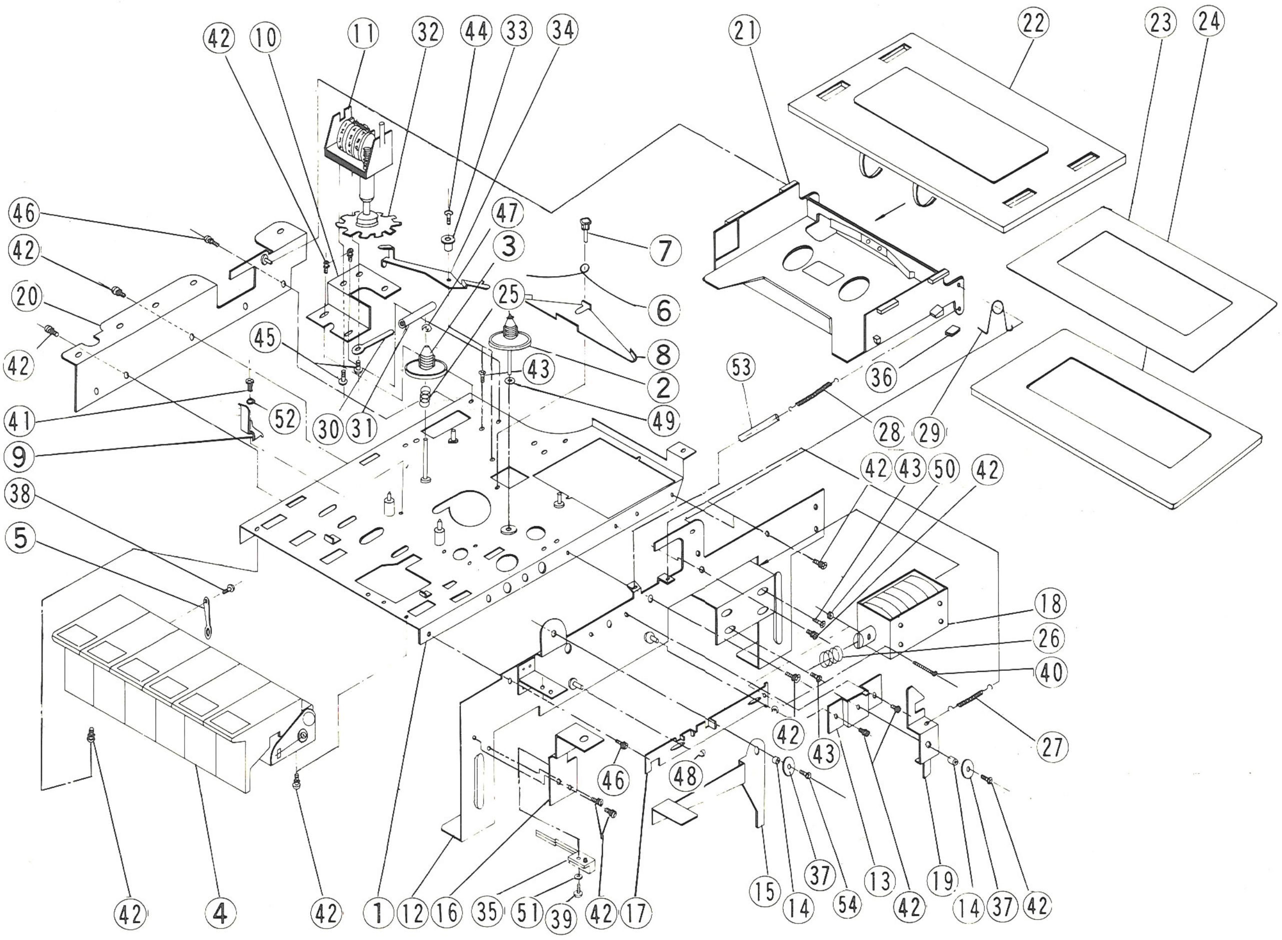
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Fig. 45

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
1	*T30987-00B	Chassis base ass'y		1
2	T42674-00A	Reed disc ass'y (2)		1
3	T42059-00A	Reel disc ass'y		1
4	*T31040-00B	Push button case ass'y		1
5	A50221-001	Lug		1
6	T42076-001	Brake arm spring		1
7	T42077-001	Brake arm shaft		1
8	T42075-001	Brake arm		1
9	T44181-001	Cassette guide		1
10	*T45775-001	Counter bracket		1
11	*T31060-00A	Counter ass'y		1
12	*T31039-00A	Bracket ass'y		1
13	*T45780-001	Bracket		1
14	*T30302-036	Collar		2
15	*T45768-001	Kick lever		1
16	*T45767-001	Bracket		1
17	*T45770-001	Slide bar		1
18	T44546-001	DC solenoid		1
19	*T45783-001	Lock lever		1
20	*T31038-00A	Holder bracket ass'y		1
21	*T45893-00A	Cassette holder (1) ass'y		1
22	*T45892-00A	Cassette holder (2) ass'y		1
23	*T46094-001	Adhesive (both sides)		1
24	*T45895-002	Holder plate		1
25	T42051-009	Spring		1
26	T42051-005	Spring		1
27	T30300-029	Spring		1
28	*T30300-084	Spring		1
29	*T45900-001	Spring		1
30	S4709-002	Wire clamp		1
31	04224-0-2	Vinyl tube		1
32	*T46547-001	Plate		1
33	T42105-001	Metal		1
34	T42104-001	Kick lever		1
35	T44153-001	Short switch	Pause	1
36	*T46095-001	Cushion		2
37	Q03091-130	Washer		2
38	SPSP2003Z	Screw		1
39	SPSP2006Z	Screw		1
40	SPSP2012Z	Screw		1
41	SPSP2603Z	Screw		1
42	LPSP2606Z	Screw		14
43	SPSP2604Z	Screw		3
44	SPSP2606Z	Screw		1
45	SPSP3004ZS	Screw		2
46	LPSP3006ZS	Screw		2
47	REE1500	E ring		1
48	REE2000	E ring		2
49	Q03093-609	Washer		1
50	NTB2000	Nut		1
51	WSB2000N	Washer		1
52	WLS2600	Washer		1
53	04224-L-2.5	Spaghetti		1
54	LPSP2605Z	Screw		1

2. Head Panel

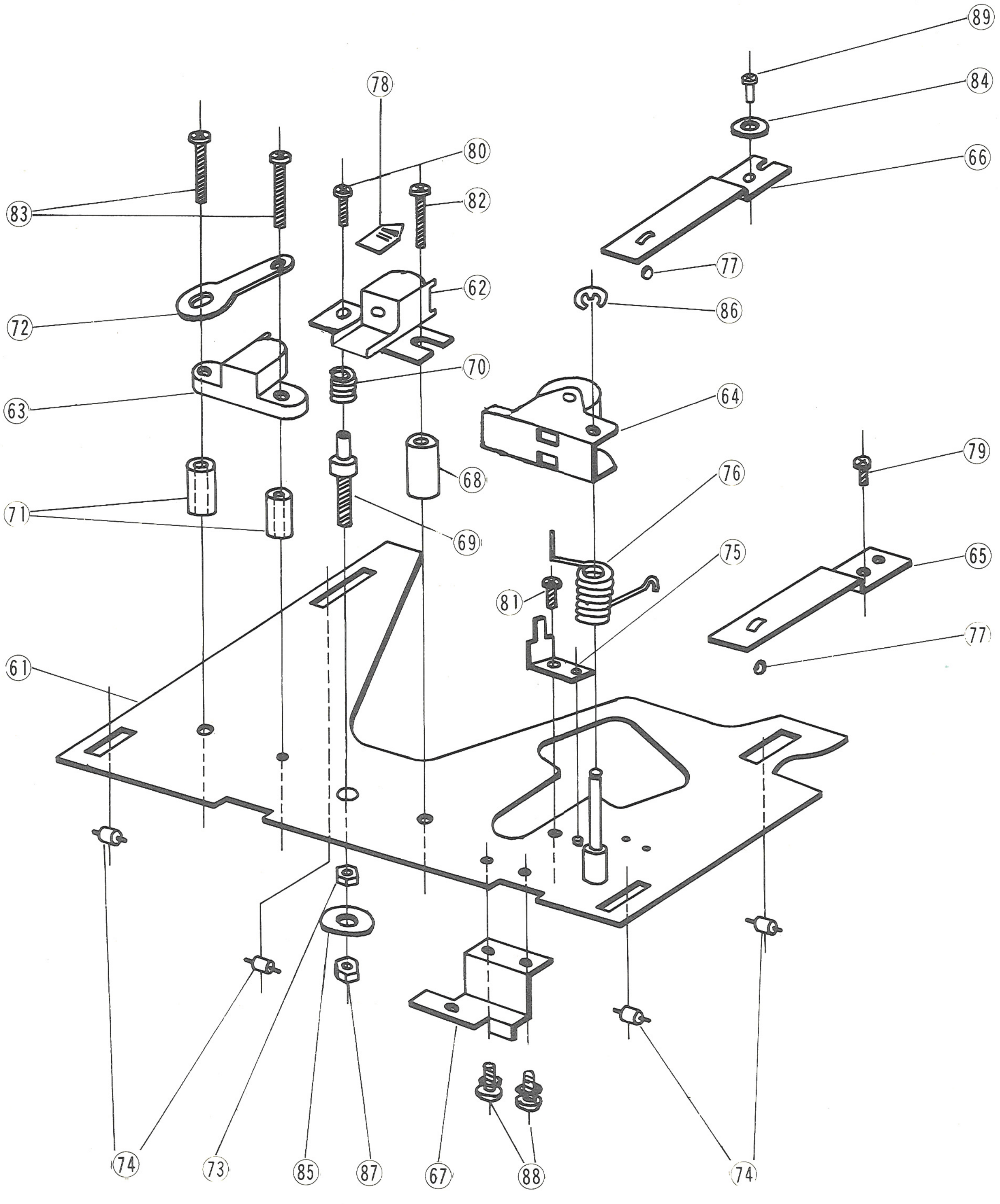
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Fig. 46

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
61	T43081-00A	Head panel ass'y		1
62	*T31063-001	Record/playback head ass'y		1
63	T30019-001	Erase head ass'y		1
64	T42052-00A	Pinch roller arm ass'y		1
65	T42058-001	Head panel spring		1
66	T42058-002	Head panel spring		1
67	*T42671-001	Head panel bracket		1
68	T42673-001	Head stud		1
69	T42045-001	Record/playback head stud		1
70	T42051-001	Record/playback head spring		1
71	T42672-001	Erase head stud		2
72	A50221-001	Lug		1
73	T42046-001	Special nut		1
74	T42057-001	Head panel roller		4
75	T43080-001	Bracket		1
76	T45138-001	Pinch roller spring		1
77	T41015-001	Ball bearing		2
78	*T46207-003	Head plate		1
79	SPSP2604Z	Screw		1
80	SPSP2006Z	Screw		1
81	SPSP2003Z	Screw		1
82	SPSP2010Z	Screw		1
83	SPSP2012Z	Screw		2
84	WNB2600N	Washer		1
85	*Q03091-150	Washer		1
86	REE2000	"E" washer		1
87	NNB2600N	Nut		1
88	LPSP2605Z	Screw		2
89	SPSP2608Z	Screw		1

3. Chassis Rear

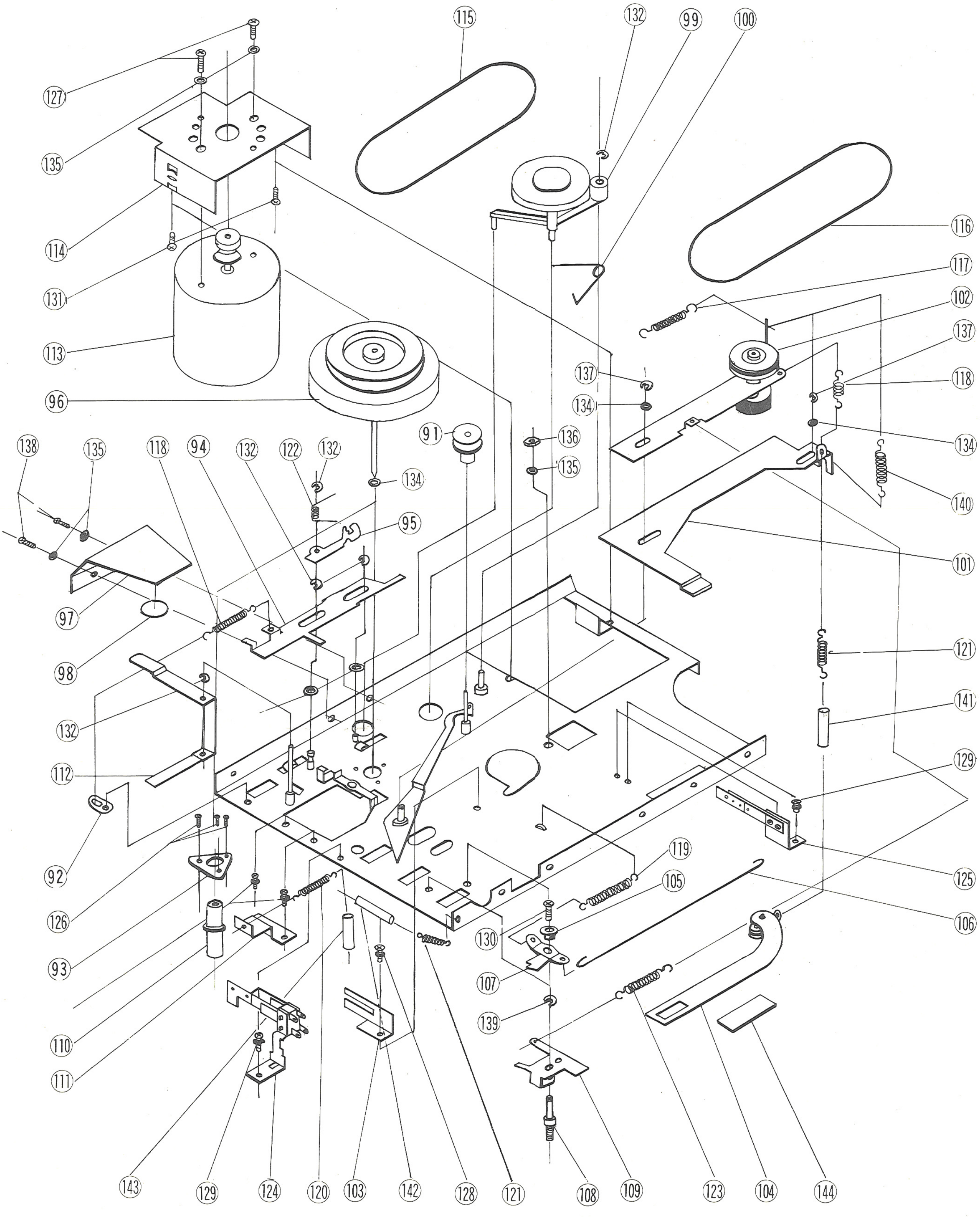
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Fig. 47

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
91	T45597-001	Counter drive pulley		1
92	51739-002	Lug		1
93	T42071-001	Metal stopper		1
94	T43084-00B	Lever Ass'y		1
95	T43069-001	Lock plate		1
96	T45132-001	Flywheel ass'y		1
97	T42073-002	Flywheel holder		1
98	T42074-001	Thrust bearing		1
99	T45134-00A	Take-up idler arm ass'y		1
100	T45139-001	Take-up wheel spring		1
101	T42088-001	Brake bar		1
102	T43656-00B	Fast forward idler arm ass'y		1
103	T45647-001	Fast forward arm guide plate		1
104	*T42098-00D	Rewind arm ass'y		1
105	T42105-001	Metal		2
106	T42106-001	Recording rod		1
107	T42107-001	Recording lever		1
108	T42109-001	Fast forward shaft		1
109	T43654-002	Fast forward lever (3)		1
110	T45133-001	Capstan metal ass'y		1
111	T43068-001	Bracket		1
112	*T45769-001	Kick lever		1
113	T45156-00A	Motor ass'y		1
114	T45155-001	Motor bracket		1
115	T45625-001	Capstan belt		1
116	*T45786-001	Counter belt		1
117	T42049-002	Spring		1
118	T42049-003	Spring		2
119	T42049-005	Spring		1
120	T42049-007	Spring		1
121	T42049-009	Spring		2
122	T43070-001	Spring		1
123	T42049-008	Spring		1
124	T30434-00B	Switch ass'y	Muting	1
125	T30515-00B	Switch ass'y	Motor S_2	1
126	SPSP2006Z	Screw		3
127	SPSP2603Z	Screw		2
128	LPSP2604Z	Screw		1
129	LPSP2606Z	Screw		4
130	SPSP2606Z	Screw		1
131	SPSP2610Z	Screw		2
132	REE2000	"E" ring		5
133	Q03093-115	Washer		2
134	Q03093-609	Washer		3
135	WLS2600	Lock washer		5
136	NNB2600	Lock washer		1
137	REE1500	"E" ring		2
138	SPSP2604Z	Screw		2
139	REE 2500	"E" Ring		1
140	*T42049-023	Spring		1
141	04224-L-1.9	Spaghetti		1
142	04224-L-2.3	Spaghetti		1
143	04224-L-1.7	Spaghetti		1
144	*T40713-019	Cushion		1

17. Packing

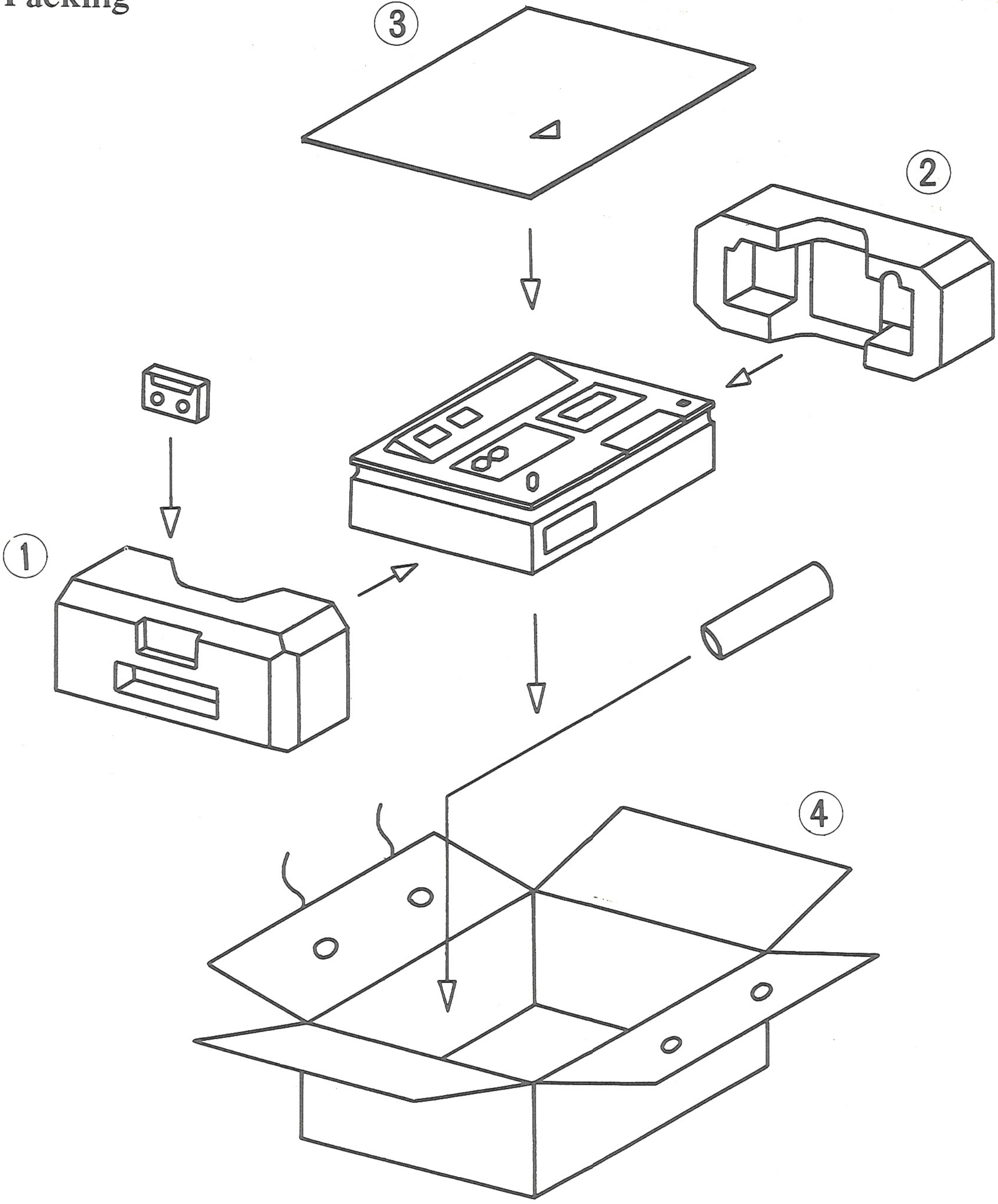


Fig. 48

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
1 ~ 4	T46396-00B	Packing ass'y	For CD-1667	1
1 ~ 4	T46396-00E	Packing ass'y	For 1667U	1
1	T11387-001	Cushion (L)		1
2	T11403-001	Cushion (R)		1
3	T46396-004	Top padding		1
4	T46396-005	Case	For CD-1667	1
4	T46396-008	Case	For 1667U	1
	T6800-00E	Envelope	For Body	1
	AP4056A-025	Envelope	For Power Cord	1
	AP4056A-036	Envelope	For Patch Cord	1
	AP4056A-077	Envelope	For Instruction Book (CD-1667)	1
	AP4056A-066	Envelope	For Instruction Book (1667U)	1

18. Accesorries

CD-1667

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	*DT-626	Audition tape		1
	T30815-00A	Patch cord ass'y		2
	T45562-00A	Head cleaning bar ass'y		1
	CD-1667-IB	Instruction book		1
	T22715-001	Warranty card		1
	T22457-001	JVC service station list		1
	T43649-001	Envelope		1

CD-1667U

REF. NO.	PART NO.	PART NAME	REMARKS	Q'TY
	DT-626	Audition tape		1
	T30046-001	Patch cord ass'y		2
	1667U-IB	Instruction book		1
	T43649-001	Envelope		1

THE LIST OF JVC NIVICO SERVICE MANUAL

(TELEVISION)

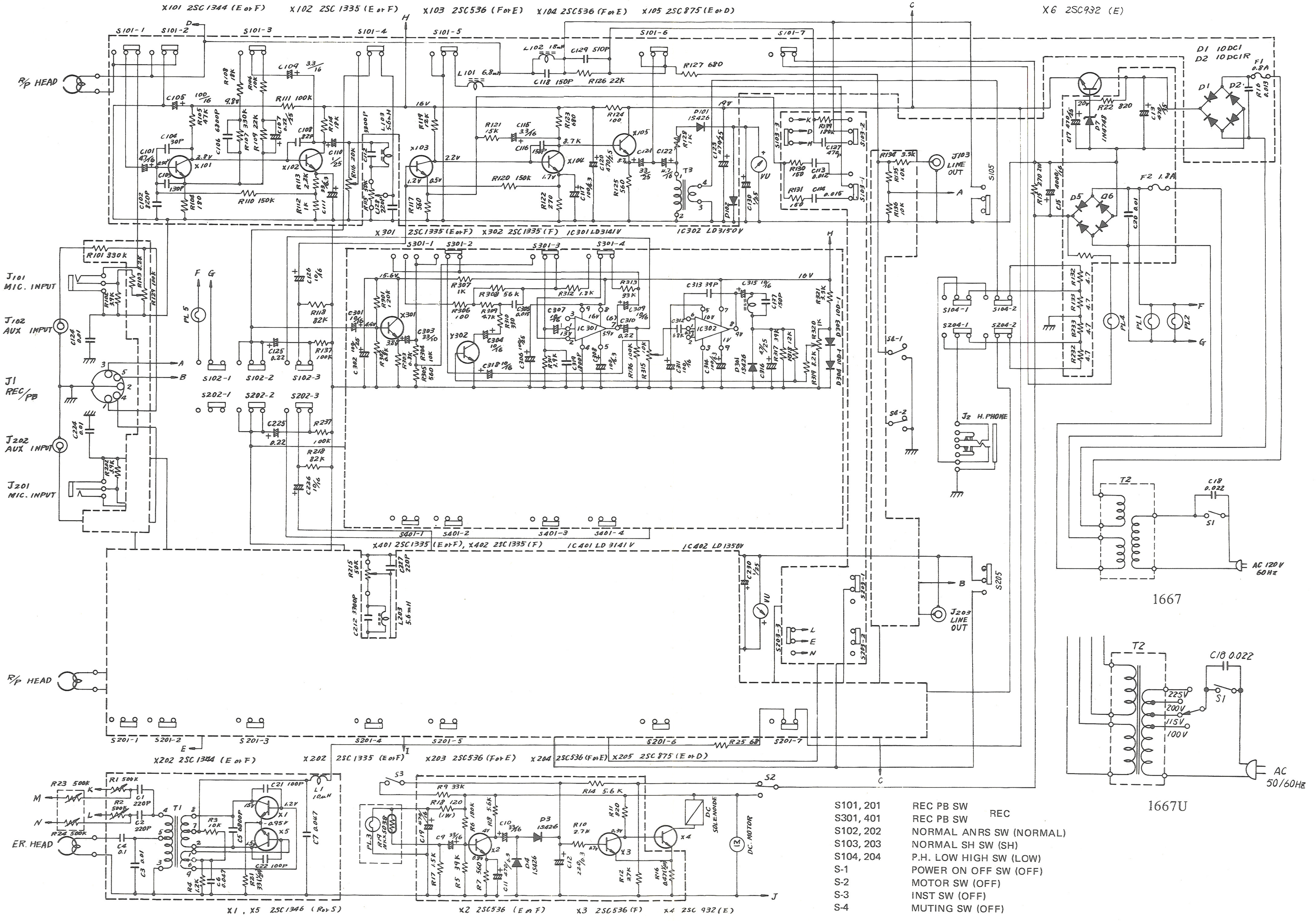
No.	Model
3051	11-7049
3052	F-505S
3053	F-597ANC
3054	9T-223FJU
3055	F-507HU
3056	7026A
3057	7062A
3058	2840HU
3059	F-597CQC F-597CQ
3060	F-442ANC
3061	2810AB
3062	F-506CQDC
3063	122-1008CT
3064	2450, 2460
3065	2850, 2860
3066	3220SW
3067	122-1005CT
3068	7020A, 7023A
3069	10-7050, 10-7060
3070	2810MU, 2820MU 2830MU
3071	2841HU
3072	F-506AB
3073	2630MU
3074	7055A
3075	122-1010CT
3076	P8008U, P8050U
3077	2841HUB
3078	3220GM
3079	2690CQ
3080	3220FL
3081	2690CQC
3082	3220SW #3
3083	3220SW #4
3084	122-2008CT
3085	3220SC
3086	122-2002CT
3087	2850AN
3088	2450AB 2450ABT
3089	3210MU
3090	2450MU, 2460MU 2461MU
3091	2850AB
3092	2870CQ, 2870CQC
3093	2640
3094	2861, 2862
3095	2451, 2462
3096	BTV/1272
3097	2850MU, 2860MU 2861MU
3098	3230
3099	2863AB
3100	HB-2001
3101	3240
3102	HB1201
3103	122-2001
3104	122-2010, 122-2009
3105	16-1252A
3106	122-2000
3107	122-2003
3108	2453AB
3109	3240GH 3240SW 3240SC
3110	2900CQD 2900CQDC

(TAPE RECORDER)

No.	Model
4001	TR-403
4002	TR-711
4003	STR-20
4004	TR-611
4005	TR-411
4006	TR-111U
4007	TR-311U
4008	TR-511
4009	JV-1
4010	MAYFAIR 400 & 600
4011	NIVICO-500
4012 (B)	TR-541U (505)
4013	TR-671U
4014	TR-161U
4015 (B)	TR-171U (555)
4016	TD-684U
4017	STR-25G, H
4018	STR-26E
4019 (B)	TR-351U (333)
4020	TR-551U
4021	CHR-100U (H)
4022	CAR-300E
4023	CCR-624U
4024	CCR-600E/1600
4025	1694
4026	CCR-620R
4027	TR-545U/1545
4028 (B)	1100
4029	CCP-630E/1630
4030	TR-561U
4031	CCR-620RE/1620
4032	CHR-250UPX
4033	TR-1035U
4034	1624
4035	CAR-310E/1310
4036	1001
4037	TR-1040U
4038	TD-694U
4039	TR-224U
4040	TR-171F
4041	TR-171US
4042	TR-175CAT 14-1974
4043	1224
4044	TD-344U
4045	CCR-601U
4046	CCR-660U
4047	TR-1049U
4048	TR-8, CAT14-912
4049	505UL
4050	1605
4051	1340
4052	1710
4053	1664U
4054	1602U
4055	1350, 1350E
4056	1400, 1400U
4057	1690, 1690U
4058	1625U, M, UD
4059	1202, 1202UH
4060	

JVC AMERICA, INC.

1667, 1667U Schematic Diagram


X101 2SC1344 (E or F)
X102 2SC1335 (E or F)
X103 2SC536 (F or E)
X104 2SC536 (F or E)
X105 2SC875 (E or D)
X6 2SC932 (E)
S101-1
S101-2
S101-3
S101-4
S101-5
S101-6
S101-7
R/P HEAD
D1 10DC1
D2 10DC1R
F1 0.8A
F2 1.8A
X301 2SC1335 (E or F)
X302 2SC1335 (F)
IC301 LD3141V
IC302 LD3150V
S301-1
S301-2
S301-3
S301-4
J101 MIC. INPUT
J102 AUX INPUT
J1 REC/PB
J202 AUX INPUT
J201 MIC. INPUT
PL5
S102-1
S102-2
S102-3
S202-1
S202-2
S202-3
J103 LINE OUT
S105
VU
S4-1
S4-2
S104-1
S104-2
S204-1
S204-2
PL4
PL1
PL2
J2 H.PHONE
T2
C18 0.022
S1
AC 120V 60Hz
S401-1
S401-2
S401-3
S401-4
X401 2SC1335 (E or F), X402 2SC1335 (F)
IC401 LD3141V
IC402 LD1350V
S205
J203 LINE OUT
S203-1
S203-2
S203-3
225V
200V
115V
100V
AC 50/60Hz
S201-1
S201-2
S201-3
S201-4
S201-5
S201-6
S201-7
X202 2SC1344 (E or F)
X202 2SC1335 (E or F)
X203 2SC536 (F or E)
X204 2SC536 (F or E)
X205 2SC875 (E or D)
M
N
ER. HEAD
T1
S3
S2
PL3
DC SOLENOIDE
DC MOTOR
X1, X5 2SC1346 (R or S)
X2 2SC536 (E or F)
X3 2SC536 (F)
X4 2SC932 (E)
1667
1667U

S101, 201	REC PB SW REC
S301, 401	REC PB SW
S102, 202	NORMAL ANRS SW (NORMAL)
S103, 203	NORMAL SH SW (SH)
S104, 204	P.H. LOW HIGH SW (LOW)
S-1	POWER ON OFF SW (OFF)
S-2	MOTOR SW (OFF)
S-3	INST SW (OFF)
S-4	MUTING SW (OFF)